RAILROAD MAGAZINE

JULY

25¢

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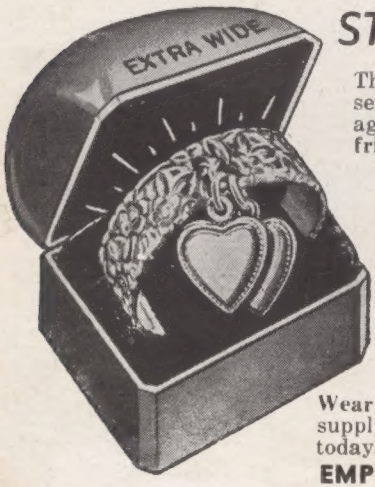

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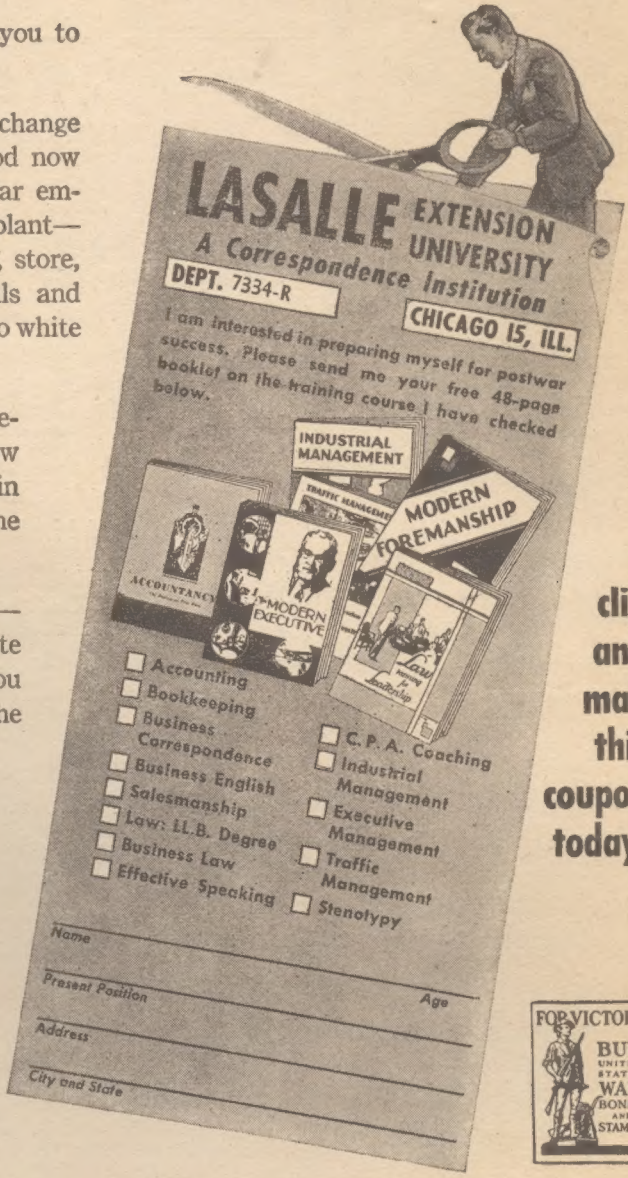

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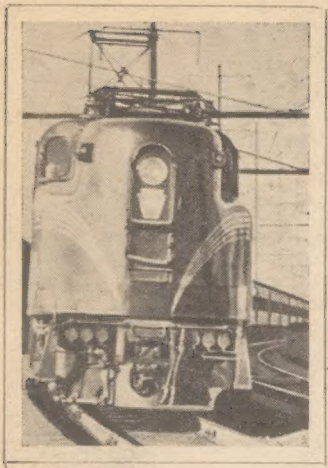

RAILROAD MAGAZINE

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Henry B. Comstock, *Editor* **Freeman H. Hubbard,** *Research Editor*

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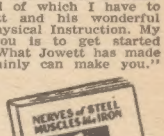

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Less Than Carload Lots

A 99-YEAR LEASE dated January 1st, 1903, will probably be terminated this summer instead of in the year 2002, according to information received from John Henry Strock III, Elm Grove, W.Va. The lease is held by the Baltimore & Ohio on the St. Clairsville & Northern, a four-mile Ohio road. The small pike was washed out by a cloudburst last July and never rebuilt, so the B&O offered its owner, St. Clairsville village, $25,000 to cancel the lease and for all salvagable property. The village council has just approved the offer, which now awaits ICC approval.

* * *

NELSONS and Smiths just about ran the D&RGW between Minturn and Pueblo, Colo., the other day. Condr. P. A. Nelson and Engr. P. H. Smith boarded redball extra No. 75 at Minturn. Getting off at Salida, they turned the train over to Condr. Claude Nelson and Engr. O. C. Smith for the run to Pueblo. Enroute Condr. Claude Nelson delivered waybills to Agent Claude L. Nelson at Canon City. Nope, they're not relatives.

* * *

HOW many miles does a locomotive travel during a month? The answer depends on various factors, including engine type and service. For example, out of 2570 Canadian National engines in use, about 40 exceed 10,000 miles a month; some total up to 16,000. The significance of these figures is heightened by wartime conditions which have greatly increased the weight of both freight and passenger trains.

* * *

RECENTLY the Rock Island's *Golden State Ltd.* left Kansas City for Los Angeles with four crated brown bears in two cages and two problems for the express company. During a brief stop, one bear gave birth to a cub. Papa bear became nervous, whereupon the owner shifted him away from his mate, to the other cage. But the couple in that other cage seemed to prefer privacy, and a free-for-all ensued. After a brief scrap ended, the second problem arose: Should five animals ride as cheaply as four? The question had not been answered at the time of our going to press.

* * *

SON finds father—that's the finale to the story of a Mexican National laborer working for the NWP who had not seen his father since the latter came to the States in 1932. Jesus P. Salazar, NWP labor inspector, was informed that one of the gandy dancers had heard his father was in this country but did not know just where. Salazar communicated with the U. S. Bureau of Immigration and Naturalization and learned that the address of the father was known to the Bureau, but authorities were not at liberty to disclose it. However, Salazar arranged for the Bureau to supply the father with the son's address and the two were soon put in touch with each other.

* * *

LONGEST Canadian National tunnel connects Montreal with Mount Royal, Que., passing under the mountain of that name. The bore is 16,545 feet long, more than three miles. Second longest CNR tunnel, the first submarine bore in North America, extends 6028 feet between portals under the St. Clair River between Sarnia, Ont., and Port Huron, Mich.

* * *

FIRST train in Chicago history left town before it arrived, we learn from John Hooks, chief clerk to the Rock Island's Asst. Frt. Traffic Mgr., Chicago. The train did not arrive under its own power and was leaving the city the first time it ran on rails. The road was the old Galena & Chicago Union; the date, Nov. 20th, 1848. The train went as far as Des Plaines River, picking up a load of wheat and returning.

* * *

INVENTOR of the original semaphore signal, J. W. Lattig, age 89, died recently at his daughter's home in Bethlehem, Pa. The first automatic semaphore was erected on the Central Railroad of New Jersey in 1893 at Black Dan's Cut, near Phillipsburg, N. J.

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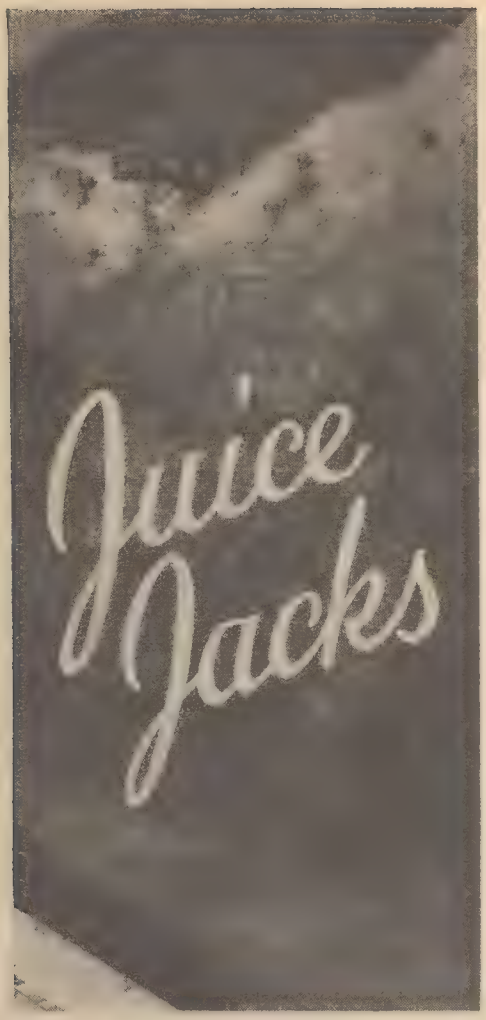
ELECTRIFICATION of steam roads is economically sound: 1, where density of traffic necessitates ultra-rapid acceleration of trains to maintain adequate space cushions between them; 2, where tunnels or city smoke ordinances preclude the use of steam power; and 3, where cheap electric power—steam or water generated—is readily available

PIONEER long-distance electrification project: the Milwaukee Road's Bitter Root Mountain trackage. Object, here, is to lessen fire hazard in vast U. S. Government forest reserve

HOW do our railroads intend to meet the problems of a post-war world? Will the carrier system which today is handling seventy-six percent of all overland traffic be content to return to its pre-war position, or worse, as soon as Berlin and Tokio display white flags for the world's greatest EXTRA? Or have they the vision and enterprise to meet the threat of air and highway competition squarely, recognizing their own particular advantages and exploiting them with imagination and vigor?

It would take a bold prophet to offer an opinion now, but transportation experts are agreed on this: No other system yet devised by man can move heavy bulk commodities so swiftly and efficiently. Rapid transit, too, is the railroaders' particular forte, and there is every indication that they will lose little LCL or pas-



duce impressive financial returns.

The rub is that much of this market must be courted, and the railroading plant readjusted to its needs. Jim Hills are sorely needed to develop train-fed suburban empires on a scale geared to the demands of postwar industrial and business regions. More manufacturers must be sold on the advantages of the "rail conveyor belt" system of production, wherein widely separated feeder plants funnel their output to a central location for final assembly and distribution. Above all, the traveling public must be convinced through advertising, backed by performance, that for speed, comfort, convenience and cost, a rail journey is preferable to the same trip in the family car.

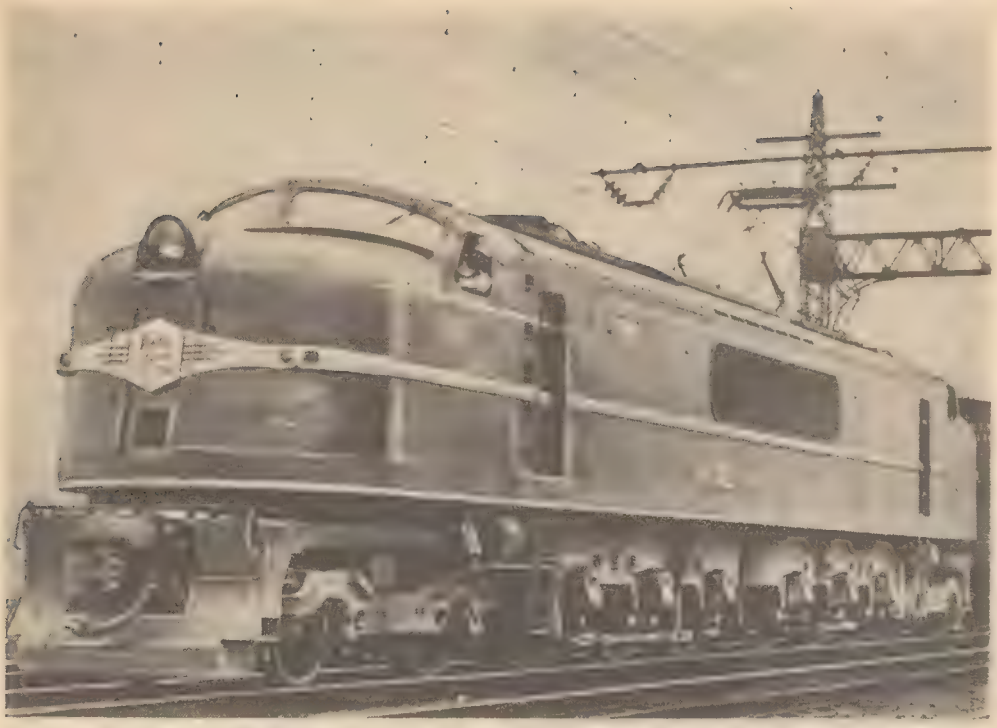
These things accomplished, it will be the operating departments' headache to keep the wheels rolling under a volume of traffic the like of which can be found in only a handful of densely populated areas today. Watch, then, say those in the know, for an unprecedented swing toward electrification. For the machine has yet to be devised which can break up rail blockades more readily than the smooth-running freight or passenger

The Electric Locomotive Comes of Age

senger business to the cargo plane or stratoliner on inter-city runs of less than three hundred miles.

In the past, rail officials have complained that most of this traffic is of the "skimmed milk" sort—in short, that it shows too low a margin of profit. Yet under the strain of the greatest industrial and military effort in all history, the conviction is growing that given sufficient volume, low fares and shipping rates can prohauler which draws its growling horsepower from white coal. Backed by the enermous energy of a stationary power plant, this "juice jack" or "motor," as railroad men have come to call it, is mechanically the most efficient thing on wheels.

But like many another great invention, it has suffered the handicap of premature birth. Only where vast hydro-electric projects have reduced power costs to a minimum, or the

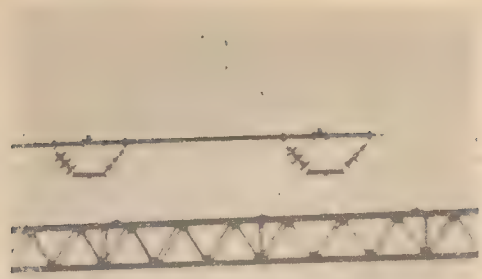


IDEAL FREIGHT HAULER, the electric locomotive, backed up by a huge stationary power plant, may develop a hauling capacity 75 percent in excess of its continuous rating, for short periods of time

transportation job is a gigantic one, can it be made to pay real dividends. For want of such conditions, its development, to date, has depended upon such characteristics as freedom from smoke and reduction of fire hazard—non-revenue producing virtues which we may consider only in light of sub-stations along the path of progress.

AS MOST OF OUR READERS know, it was the stringing of overhead rails through the Baltimore Tunnels, in 1895, which sparked off heavy traction electrification. True, this was no pioneer project in the strict sense of the word. As early as 1835, Thomas Davenport had exhibited a toy electric railway at Springfield, Mass., and Boston. Three years later a canny Scot named Robert Davidson discovered an unsuspected strain of religious fervor among the steam drivers and firemen of the Edinburgh-Glasgow Railway, when he introduced a little car that ran successfully by battery. "Black magic," they sighed, as they piously kicked the horseshoe magnets out of it.

Professor C. G. Page of the Smithsonian Institute had better luck. In 1857 he beat the Pennsylvania Railroad to the switch, streaking between Washington, D. C., and Bladenburg, Md., in thirty-nine minutes flat. There wasn't enough juice left in his batteries at the end of the five-mile run to fry a carrier pigeon egg, but one Herr Siemens took heart from the performance and in 1879 exhibited a locomotive at the Berlin Exposition, which hauled three carloads



NEW HAVEN ROAD first capitalized on electrification's greatest asset —lightning pickup. Without such acceleration, the mighty cavalcade of shoreline traffic—averaging a train each 250 seconds of the day and night—could never be kept in high-speed operation. Diesel-electric locomotives have the same characteristic, but their cost per unit of horsepower developed is twice that of the trolley-fed electric. This difference exceeds the expense of erecting and maintaining catenary where large numbers of engines are assigned to a given territory

SLEET is a winter enemy on New York Connecting Railroad's ***Hell Gate Bridge.*** Locomotives, operating with both pantagraphs raised, shuttle back and forth across the long structure, then, to keep ice sheath from forming on the trolley wires.

of supermen at a speed of eight miles per hour.

In that same year, Stephen D. Field stumbled upon the third-rail, figuratively speaking. His four-wheeled electric scooter was the first to receive its power from a fixed station—a significant advance that Thomas A. Edison overlooked when he took a bow as the "inventor" of the electric locomotive, in 1880. Instead, the wizard of Menlo Park

THOMAS A. EDISON toyed with electric traction at his Menlo Park estate half a century ago; brayed hoarsely when one of his little trains upset, dumping dignitaries out through open windows to the grassy right-of-way. Too bad he didn't think to harness the static electricity in Grandpa's beard

AT RIGHT: Nothing new under the sun. Monsieur J. Heilmann actually built this wind-splitter for the French State Railways, in 1893. It had a steam driven dynamo, feeding electric traction motors; attained a speed of sixty miles per hour!

went all out for two rail, a system of power delivery which has since found its only real disciples in the model railroading world.

But, as we have said already, it remained for the Baltimore & Ohio to introduce electrification to an American steam railroad. During the Mayer administration this system still lacked a direct rail connection to the heart of Baltimore—cars and trains being ferried across a narrow branch of the Patapsco. Annoying at best, transfer delays became an abomination in bad weather and it was finally decided to build an elevated connecting line across the city between Camden Station and the Philadelphia stem, paralleling Pratt Street. Some property was actually acquired for this purpose and an order for steel went out, but popular disfavor rose to such a pitch that the plan was dropped. In its place came a proposal for the Baltimore Belt Railroad, with its 7300-foot Howard Street Tunnel. Mindful of the dirty, smoke-clogged Pennsylvania bores, citizens again protested—until the magic word *Electrification* changed their trepidation to a surge of civic pride.

Baltimore, the cradle of American railroading, was to set the pace again. Not only would "huge, smokeless locomotives" shuttle beneath the city streets, but the tunnel was to be lighted by incandescent lamps, and the signals, as well. "It is likely," said the Baltimore Sun, "that the engineers' watches will be disturbed by the electric current, and for this reason illuminated clocks are to be placed at frequent intervals along the tunnel walls."

June 27th, 1885, was no ordinary day in Baltimore. Throngs gathered around the crossover at North Avenue then, to watch a stubby little thirty-four foot locomotive complete the first run through the tube system. With GE's William Cooper at the control switch, it ground in from Camden Station in exactly seven minutes, hauling a standard-weight steam train, locomotive and all.

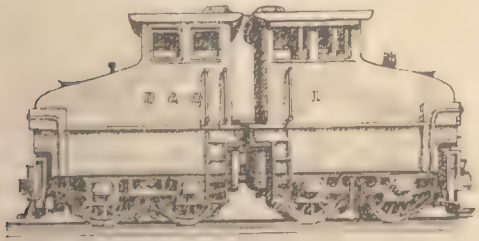
By modern standards the little electric One-Spot was a pygmy. Yet she developed an amazing drawbar pull for her day—56,000 pounds. It was said that given the opportunity she could haul a train at sixty miles per hour. But she was never put to the test and the speed potentialities of electric power awaited later discovery. After a long and honorable career, during which other and larger juice jacks came to battle the 0.9 percent eastbound grade with an average of thirty-three trains daily (they return running light, for westbound steam traffic can be drifted through the tunnel zone), old number 1 was retired. Today she is a B&O showpiece in the city she served so well.

•

IF THE SUCCESS of the Baltimore Belt Line venture did not immediately impress other railroads, the public at least took it seriously. Manhattanites became incensed when, at the turn of the century, the New York Central's Park Avenue cut became the setting for a number of grim collisions. In each instance testimony pointed to poor visibility resulting from the steam curtains which formed beneath street overpasses, blotting out signals and marker lamps. Finally, on January 8th, 1902, ten-wheeler 1018, inbound with a passenger train, ran a red board veiled in the fog of a northbound engine. Crashing into the rear end of a New Haven train which had stopped at 54th Street, she took a toll of fifteen lives. But the smoke which vomited from the shattered wooden coaches eventually drifted into Albany, where a state law was enacted, prohibiting the passage of steam engines south of the Harlem River after July 1st, 1908.

Faced with the problem of electrifying its New York terminal trackage, the Central decided to take full advantage of this motive-power change by extending such service to suburban zones. For a time officials toyed with the idea of using high-voltage alternating current, which could be carried long distances at relatively low cost. But without the

UP GOES THE SAFETY VALVE of the 852 in a blast of indignation, as B&O Motor Number 1 tweaks her nose out of Baltimore Tunnel in 1895



BELOW: Who said she wouldn't run? A pony-load of New York Central officials get an eyeful of the 6000 as she makes her maiden trip on New York suburban-zone trackage in 1905. Only one third-rail has been laid

precedent of practical experience, the road hesitated to risk failure on a section of line requiring high dependability of service. Too, clearances were limited, and the city frowned upon the use of exposed, high-voltage transmission lines.

The Baltimore & Ohio installation had been built to operate on 650-volt direct current, generated in Camden Yard, and fed by a two-rail overhead system to inclined pantangraphs on the top of the locomotive. An expensive and not too satisfactory carrier, it had been adopted in the belief that it was necessary for the safety of the railroad's employes. But by 1902, a well guarded third-rail system was in operation.

Profiting by B&O experience, the New York Central constructed power houses at Port Morris and Glenwood, with a total capacity of 60,000 kilowatts. Either was, and is still, capable of feeding the entire third-rail network installed from Grand Central to Harmon (32 miles), and White Plains (22 miles). To further insure an uninterrupted surge of 600-volt current under all conditions, duplicate transmission lines were supplied, together with a storage battery reserve system. The first section of electrified trackage to be completed, extending from 42nd Street

Photo by Ted Gay, 156 Van Buren Ave., Teaneck, N. J.

TWENTY-TWO-FOOT HEIGHT of Hoosac Tunnel, near North Adams, Mass., furnished ample clearance when Boston & Maine strung catenary through it in 1911. Motors of the type pictured above haul less tonnage, now that Diesel freight engines grumble through the four and three-quarter mile bore unassisted

to Highbridge, was shot hot on December 13th, 1906. By February of the following year, all trains in and out of Grand Central were being electrically operated, and poor visibility in the terminal zone had become a thing of the past.

BY NOW three other roads were sniffing tunnel gas speculatively. One was the Grand Trunk, whose St. Clair River bore, between Sarnia, Ont., and Port Huron, Mich., smoked like a wet chimney whenever a train wheezed up its 2 percent grade. Another, the Boston & Maine, had long required fire-eaters for its Hoosac Tunnel enginemen.

The third interested carrier was the Great Northern. To conquer Cascade Range in the State of Washington, Jim Hill's road had used a switchback over Stevens Pass from 1892 until 1900. Intended only as a temporary route it was replaced in the latter year by a two and one-half mile long, high-elevation tunnel. Due to the heavy trains hauled, and a difficult eastbound grade, smoke was more than an annoyance in this Cascade bore.

In February, 1903, a heavy freight engine locked knuckles with a passenger jack and together they began the heartbreaking climb to the summit with a long string of coaches. When they were well inside the tunnel the coupling between the two locomotives broke. Three times, the engine crews made repairs, but a 1.7 percent grade, combined with the weight of the train, proved too much for the straining steel, and at each try the coupling again let go. Meanwhile the long bore was becoming more and more choked with smoke.

In desperation the crew of the freight engine finally pulled ahead, intending to run for help. By now passengers in the cars were being seriously affected by gas. Realizing that the only chance of escape was to back the train downgrade to the tunnel mouth, the conductor started toward the engine. Battling through the sulphurous, death-laden air he managed to reach the cab, where he found the engineer and fireman grotesquely sprawled out on the deck. Before he could clamber over them to the right-hand side he, too, was overcome.

Fortunately a fireman named Abbot happened to be a passenger on

Photo by Sgt. Bob White, U. S. Army

MICHIGAN CENTRAL electrification project under the Detroit River eliminated slow car-ferry service

TWELVE STEEPLE CAB LOCOMOTIVES haul Michigan Central traffic under busy Great Lakes' traffic. Ruling grade is 2 percent, both ways

the train. Alarmed, as the conductor had been, by the condition of the air in the coaches, he followed him forward and contrived to release the brakes. A shudder ran the length of the long train, a car wheel clicked and then another and another. They were on the way to safety. But Abbot's job was only half done. He still had to retain consciousness until the coaches were in the open and stopped. That he did it was a combination of grit and miracle to which more than a hundred passengers and crew members were to owe their lives.

DEDUCT $600,000 a year from the cost of operating Great Northern electrics. That's what the road paid annually to clear the snow from its earlier crossing of the Cascade Range

ELECTRIC MOTORS thread the longest tunnel in the Western Hemisphere—Great Northern's 8-mile Cascade bore. Switchback over Stevens Pass once carried GN across the range

THIS near-tragedy jolted the road into further investigating the possibilities of electric traction. Further, because as early as 1892, Great Northern president Villard had consulted an up-and-coming young engineer named Frank Sprague regarding the possibility of handling main-line traffic out of Chicago with 1000-horsepower juice jacks. The

plan had never materialized but now, with the smoke nuisance of the Cascade Tunnel as a concrete incentive, work was begun on a three-phase alternating current transmission system through the bore. That is to say, three separate delivery circuits were supplied between the power plant and locomotives, by the use of as many wires, or rather, two overhead wires and one running rail. Through each circuit passed alternating current, whose characteristic is that it does not have a constant value but, instead, rises and falls between zero and its maximum, reversing itself with each surge. These surges, or "cycles", as they are called, are timed at the power house, and might be likened to the strokes of a piston in a cylinder. In the case of the three-phase system, the cycles on each circuit are staggered, so that when one is at its maximum, another is on the ascent, and the other is descending. By carrying all three circuits into a locomotive, and using them in one-two-three order to feed a number of electro-magnets grouped in a ring, a rotating magnetic field is formed. Inside this field, or stator, is a pivoted magnetic core resembling the armature of a conventional motor but having no wire connection whatsoever between it and the field or power source. Instead it responds to an electrical phenomenon known as Lenz's Law, namely: that if a magnet or field is passed near a coil of wire, there is induced in this coil a current which exerts a drag on the magnet or field, tending to pull the same back. But since the field is immovable in the motor arrangement just described, the core does the turning, following the rotating tug set up

ARTERIAL FIBRE of any electric system is ***copper.*** It was logical, then, for the red ore-carrying Butte, Anaconda & Pacific to adopt the juice jack. Its twenty-eight stubby motors ran more than a million miles last year, with an availability record of 98 percent. Annual saving over steam operation is estimated at $240,000

the requirements of any one locomotive, the result is a fixed-speed motor which can only be made flexible, at starting, by running brush connections to the core, or rotor, and cutting resistances into the inducted current passing through it.

Why, then, was the Great Northern willing and anxious to string double catanary? The answer was *regenerative braking.* For the induction motor automatically becomes a generator when its rotor exceeds fixed, or "synchronous" speed. Thus on down-grades it can be made to return to the wires from twelve to fourteen percent of the power used while motoring. At the same time the converted units develop a powerful drag or braking action which greatly reduces shoe and tire wear.

At the time the road made its decision, no other form of regenerating braking had been devised, and GN motors, with their two trolley poles, were a source of wonder to the entire engineering world when, in 1909, they made their first runs through the Cascade bore. But events move swiftly and twenty years later both the tunnel and two-wire system were obsolete, the first had been replaced by the longest hard-rock hole in the

Lower photo by Jim Lusk, 2022 Del Norte, Berkeley, Calif.

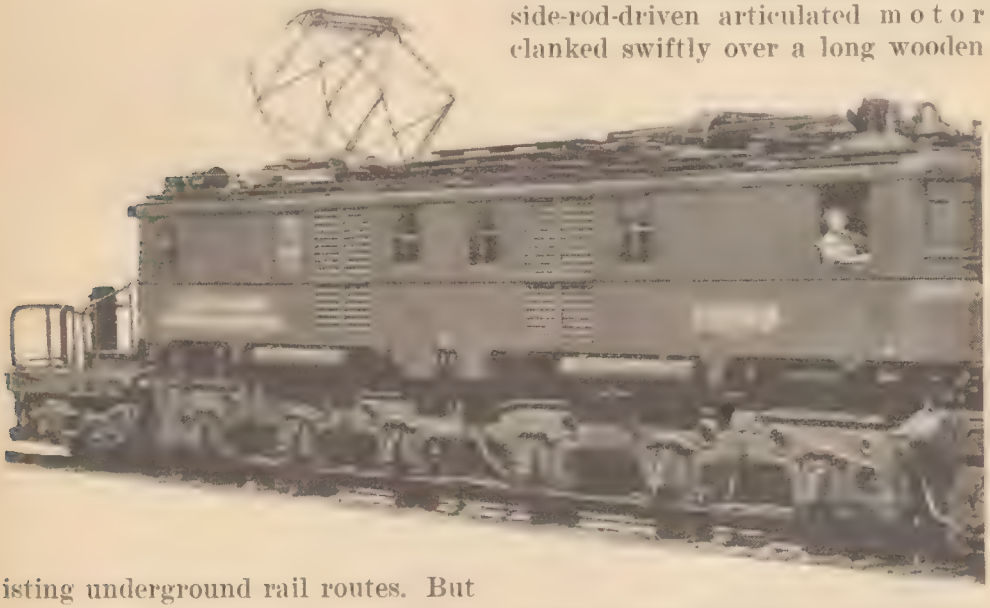
by the three-phase A.C. power.

All this sounds like a complicated way of doing an easy job. Especially when we reflect that an induction motor turns at a speed determined, not by the voltage fed it, but the number of power surges per second emanating from the generating plant. Since it is not practical to alter this frequency to meet

Western Hemisphere, and the latter by a single-phase alternating current system involving ninety-three miles of track and seventy-three route miles. The engines used are of the motor-generator type, converting A.C. to D.C. power for the traction motors.

ST. CLAIR and Hoosac tunnel electrification projects of 1908 and 1911, respectively, ended the swing toward sweeping the smoke from existing underground rail routes. But white coal had become a "must" for new and vaster subterranean projects. Michigan Central shot rails hot through its Detroit River tunnel in 1910. And the East buzzed with talk of a wonder-man named Rea who, fresh from the job of sliding B&O trackage unobtrusively beneath the streets of Baltimore, was now engaged in making Manhattan Island a way-stop between the Newark meadows and Long Island City. There came a day in September, 1910, when a trainload of dazed commuters from the Forty-Ninth State were told that there was no further need for them to rush en-masse for an East River ferry boat. While they gulped to relieve the bubbles in their ears, they were whisked swiftly and sootlessly beneath the busy waterway to a smooth stop beside one of the Pennsylvania Station's long, coach-floor-level platforms. With more than forty miles of 650-volt D.C. trackage now available, LIRR passengers could at last consider themselves white-collar workers.

Soon afterward, an officious little side-rod-driven articulated motor clanked swiftly over a long wooden trestle across the Jersey marshes and with a startled rattle of window panes plunged into the heart of Bergen Hill. A couple of minutes later it, too, ground to a halt at Gotham's new and wonderful cathedral of transportation. The East and Hudson rivers had been underpassed. It took thirty-one electric motors to handle the Pennsy's tuscan-red passenger fleet between Sunnyside Yard, where trains were serviced and turned, and swamp-isolated Manhatten Transfer. Tireless, trouble-free juice jacks that rolled up nine and



SHUTTLE ENGINE that sired New Haven and Pennsylvania race horses is this Cleveland Union Terminal motor, one of twenty-two used for coach yard switching and train service between Collinwood and Linndale, Ohio

one-half million miles of precision service in their first eight years on the road, with only twenty-one engine failures chalked against them.

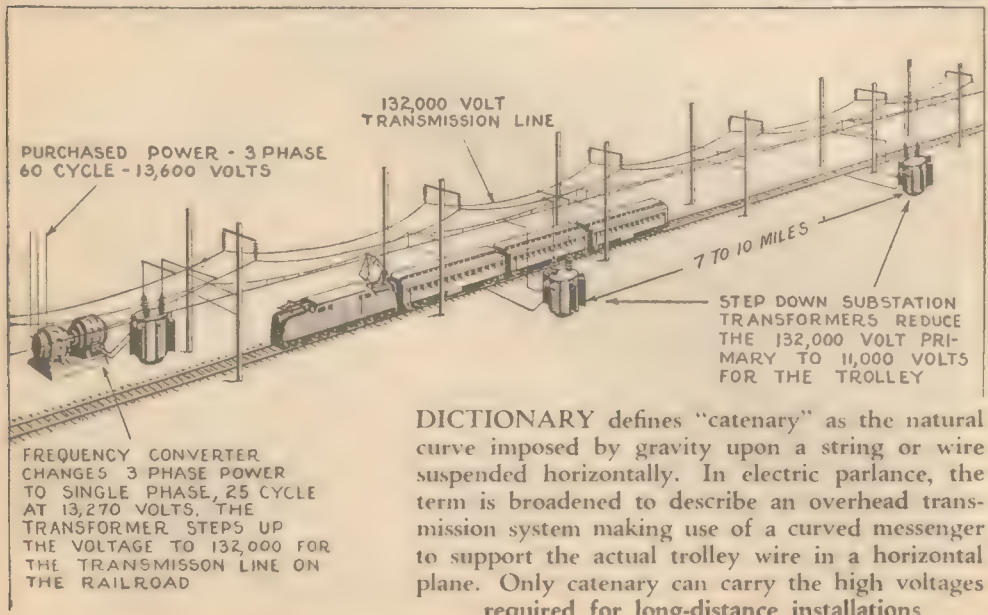
But tunnels were not the electric locomotive's only forte. Wherever they were put to work they showed new and unsuspected talents. Frank Sprague's amazing system of multiple-unit control, which permitted any number of power trucks to be operated from a single cab, was just as applicable to heavy traction, and juice jacks soon appeared running tandem.

OUT in the west, the Chicago, Milwaukee & St. Paul cast an interested eye in the direction of the Great Northern. It had no long Cascade Tunnel to consider, but it was concerned with steam power's threat to a huge Government forest reserve in the Bitter Root Mountains of Montana. Already the line had a financial interest in the Butte, Anaconda & Pacific, which road had begun hauling ore trains with juice in 1913, using 2400-volt D.C. current, carried by an overhead transmission system. Convinced that a higher voltage would be more economical, the St.

HEAVY GRADES, numerous tunnels, and necessarily low operating speeds which taxed the capacity of its line, caused the Norfolk & Western to turn to electrification in 1915. Two-unit LC-2 motors have a maximum tractive effort of 185,000 pounds

BENEFITING by N&W's experience, neighboring Virginian Railway began electrification of its line from Mullins, W. Va., to Roanoke, Va., in 1924. Three-unit pusher at trestle-end is cut into train ahead of caboose, which it might otherwise crush

Photo by Lucius Beebe



DICTIONARY defines "catenary" as the natural curve imposed by gravity upon a string or wire suspended horizontally. In electric parlance, the term is broadened to describe an overhead transmission system making use of a curved messenger to support the actual trolley wire in a horizontal plane. Only catenary can carry the high voltages required for long-distance installations

Paul tried 6000; finally settled for half that amount and started raising wooden trolley poles from Harlowton, Mont., to Avery, Ida., four hundred and thirty-eight miles, in 1914.

This was no flatland project. There were three mountain ranges to be crossed: the Big Belts, the Rockies and the afore-mentioned Bitter Roots, at elevations ranging from forty-one hundred to sixty-three hundred feet. For twenty-one miles on the eastern slope of the main rib, there is a ruling 2-percent grade—a factor which encouraged the development of a direct-current system of regenerative braking. Though somewhat more complicated than the three-phase A.C. arrangement already described (insofar as locomotive apparatus is concerned) it was and is entirely satisfactory, and nets

Left: Pennsy R-1, wheeling the *Broadway*

Photo from Railroad Photographic Club, 47 Royal St., Allston, Mass.

BEWILDERING to the layman is the lacy copper network over terminal trackage. Upper photo pictures wire crew at work on New Haven "steady"

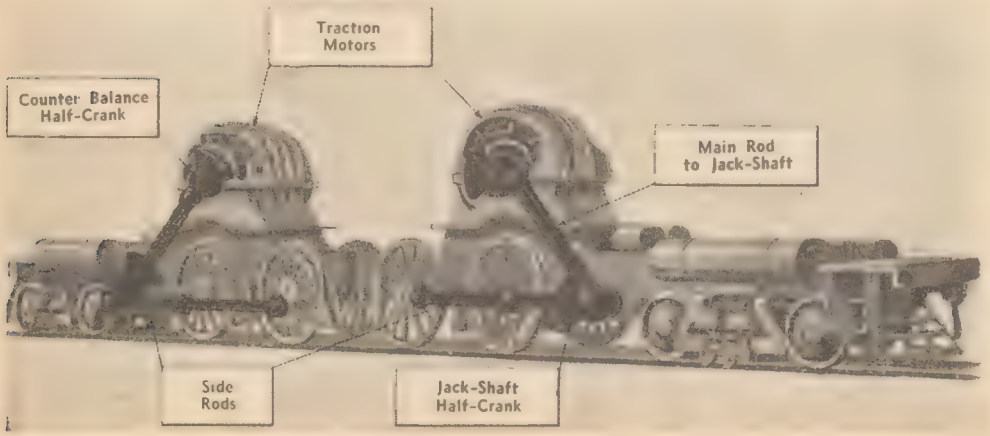
the railroad a cool eighty thousand dollars annually in juice return, and perhaps another forty-five thousand through reduced brakeshoe wear.

Availability of cheap hydro-electric power, combined with gratifying performance on this two-division proving ground, led the line to string more wire in 1917, this time above two hundred and seven miles of Columbia and Coast Divisions' trackage extending between Othello and Tacoma, Wash., and to Black River, nine miles south of Seattle.

While this was going on, the Norfolk & Western was having trouble with a bottleneck of traffic west of Bluefield, W. Va. In this area are many colliery sidings and short branches penetrating coal fields, so that the normal service consists of collecting loaded cars or trains for eastbound trips and delivering empties on the return. It is a region of numerous tunnels, heavy grades, and necessarily slow operating speeds—a perfect setup for electrification.

Construction of an 11,000-volt, single-phase A.C. installation was begun in 1913 and put into operation two years later. Probably its most novel feature was the changing of power, within the locomotive, to three-phase current. This was accomplished through the use of a simple mechanism called a phase-converter which completely did away with the need for three-wire transmission where the regenerative braking feature of induction-type traction motors was desired. In the case of N&W's heavy coal traffic, the constant-speed feature, considered undesirable in most types of service, became a positive asset by maintaining limited and predetermined speeds regardless of the load. Because the trains are long, making it difficult to get coincident action between the head and rear locomotives, where helpers are used, these husky motors have been designed to permit full current to be

APPLICATION of electric power to the wheels has taken many forms. To obtain high horsepower with a limited number of motors, several roads turned to the jackshaft drive, which permits armature and field widths to exceed track gage. This arrangement has the advantage of rugged simplicity, but nullifies to some extent the constant-torque feature of the motor, itself. Gearless drives eliminate this disadvantage, but impose road shocks directly on the power unit. Currently favored are geared motors, used with a quill drive of the type pictured on page 37

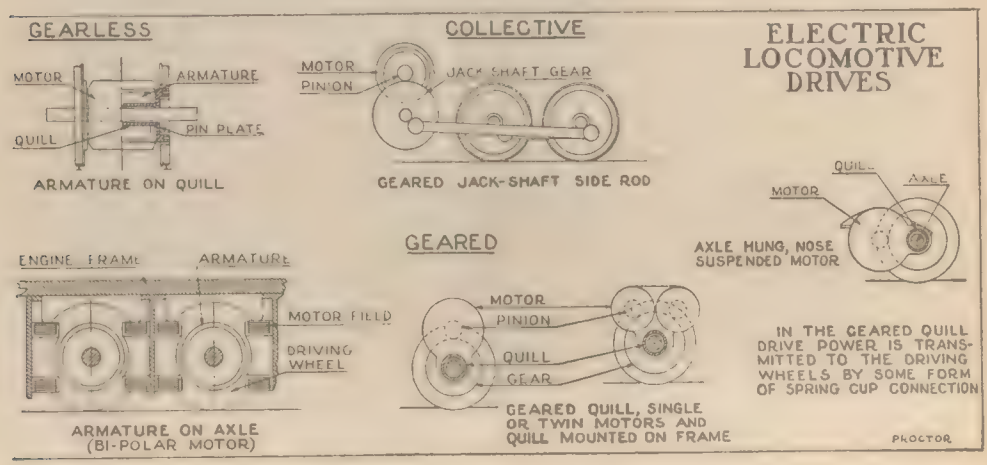


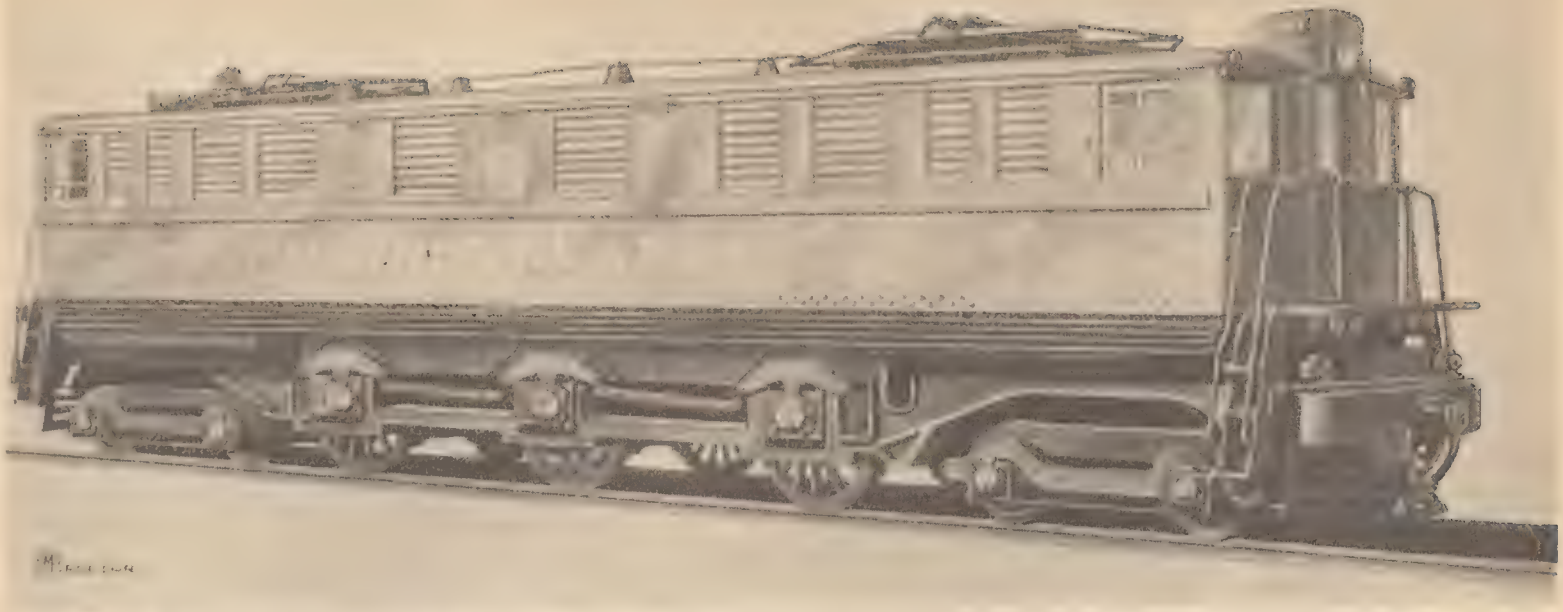
applied for five minutes without movement. The original project, extending between Bluefield and West Vivian (30 miles), has since been projected on to Yeager, including important branches.

Not to be outdone, the neighboring Virginian installed a similar 11,000 volt system in 1923, from Mullens, W. V., to Roanoke, Va. (133 route miles). Its three-unit engines handle nine-thousand ton drags unassisted, except for a short, stiff climb out of Mullins.

SO MUCH for the "by-product" utilization of electrification. When we think of it in its greatest role—that of the traffic blockade buster—two great systems immediately come to mind. One is the New Haven, whose gateway to New England is a four-tracked, catenary-fed line extending from a Woodlawn, N. Y., connection with the New York Central, to the city from which the road takes its name. The other is the Pennsylvania, which today operates more than fifty percent of all the electrified steam-road trackage in the United States.

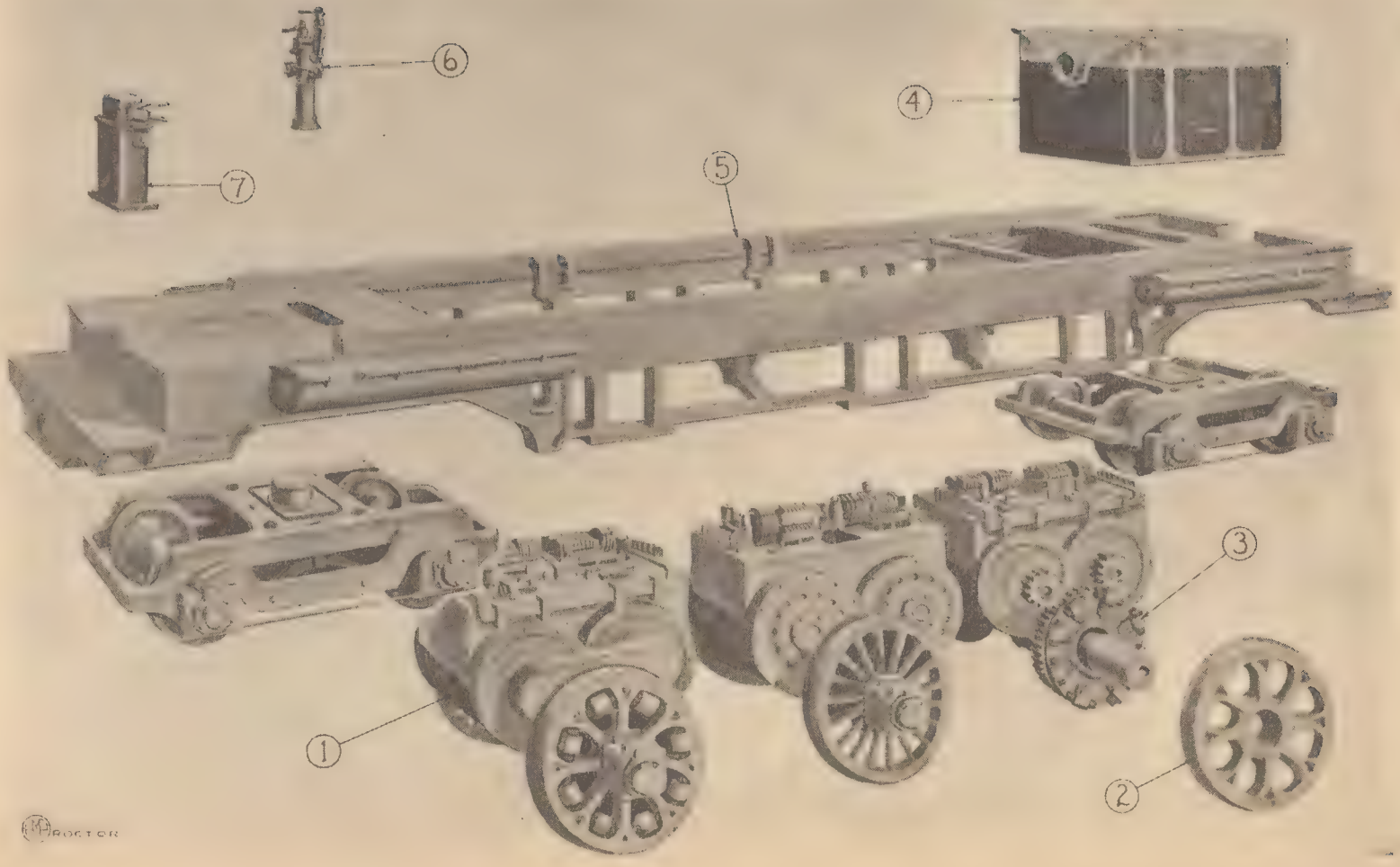
The first of these two carriers is an oldster in the field, having put motor cars on its Nantasket Beach branch as early as June 30th, 1895. Not too pleased with a 700-volt D.C.





TWO HUNDRED TONS of engine weight and the greatest horsepower ever tied to three driving axles (3750)—that's the Pennsylvania's P-5a class. There's not much hint of her amazing capacity in the staid outline of this freight hauler, but under the box-cab is a wealth of mechanical detail. Key numbers on the following pages indicate: 1, twin alternating current traction motors geared for seventy-mile-per-hour top speed; 2, driving wheels for quill application of power (note that only one wheel on each axle assembly is so designed—later GG-1s have quill drive on all traction wheels); 3, the quill itself, showing spring cups; 4, oil burning train heater which permits locomotive to be used in passenger service when necessary; 5, cast-steel engine bed incorporating main frame members, pedestals, motor-support transoms, front and rear decks, cab supports and all essential brackets for attaching brake, equalization parts, and draft gear; 6, airbrake valve; 7, master controller; 8, air compressor for braking system; 9, main control unit, embodying main transformer, blowers, control circuit generator, main circuit contactors, high-voltage switch groups and breakers; 10, riveted cab; and 11, pantagraph (there are two of these on each locomotive with high voltage bus connection which can be cut out should one pantagraph be damaged)

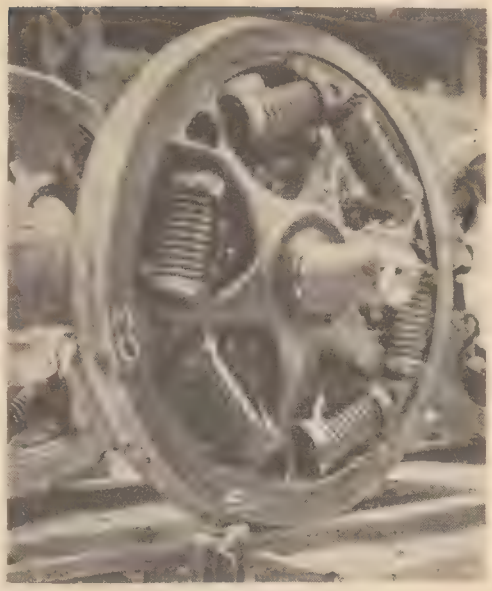
BASIC ELEMENTS of Pennsylvania P-5a locomotive. Key to numbers on page 32



PROCTOR

system, the road's officials resolved to try alternating current when, with the "Central," they found the approach to New York's 42nd St. Station barred to steam power. A pioneer, this 11,000-volt single-phase installation, proved a source of pleased amazement even to its sponsors. Power drop in its long transmission lines was slight, and the substations required to boost the current at intervals (much as pumping stations maintain pressure in an extensive water supply system) required no attendants. These advantages far outweighed the single drawback that all New Haven power entering New York Central trackage had to be supplied with third-rail pickup shoes and A.C.-D.C. motors. Through the excellent, fast service maintained on its electric racecourse, the railroad has developed a vast industrial and residential area, placing attractive communities as far away as Westport, Conn., in the New York City suburban zone. In 1917 electrification of the New York Connecting Railroad, in which the New Haven has a proprietary interest and over which it operates its locomotives, gave the system an uninterrupted electric route into Penn Station, via LIRR connection.

The Pennsylvania's present electrification system is but an extension of the same principle—literally and physically. Faced with the choice of retaining steam service and increasing trackage in a region where real estate evaluations and taxes were staggering, or of going all out for juice, the road chose the latter course and has done the job with characteristic thoroughness. Beginning in 1928, great H-beam catenary poles began their march to Philadelphia. Gray work trains reeled out their



SMOOTH RUNNING results from use of quill drive. Mechanical principle might well be likened to the fingers of a hand passing between the spokes of a wheel and cushioned from them on either side by coil springs. When the hand turns, these springs yield somewhat, absorbing vertical and rotary shocks

thousands of miles of copper and aluminum wire to form a geometrically precise spider web that glistened with porcelain insulators. Look closely at the slim trolley line and you will see that it is staggered slightly to right and left of track-center at evenly spaced intervals. That's to distribute friction across sliding pantagraph shoes of engines running under it—motors which collectively girdle the globe more than nine hundred times annually.

Philadelphia, then Wilmington, Baltimore, and Washington, D. C. The running time of the *Congressional* cut forty minutes! Talk of turning west at North Philadelphia and, utilizing the old suburban electrification system to Paoli, extending A.C. power on to Harrisburg.

More steel—twenty-seven thousand five hundred poles, to be exact. Two-hundred million dollars distributed among twenty-five thousand workers in three-thousand five-hundred industrial plants. *And all this in the midst of the world's greatest depression.*

But it's paying dividends today. Not only to the railroad, but to the Nation as a whole. Tomorrow? Well there's talk of giving the Horseshoe Curve an electric hotfoot, and dropping down from Cresson to clear up a part of Pittsburgh's smoke. If that happens, watch the New York Central. Niagara power plants may yet time the *Century's* pulse.

NOW for a word about the focal point of the whole electrification system—the juice jack itself. Why does it show, if possible, an even greater variation of appearance and mechanical characteristics than the steam locomotive? The answer, in the first instance, is that it does not require its various parts to be arranged in any fixed physical relation to one another, and can therefore be adapted to a wide variety of cab arrangements. Curiously the Baltimore & Ohio's little One-Spot set a precedent for the most modern of all motors. For it had its engineer's controls situated in a raised compartment in the center of the body. This afforded maximum crew protection in the event of a collision, with very little sacrifice of visibility; an advantage which the New York Central seized upon when it designed its first main line motors. Today's all-welded Pennsylvania GG-1s, with their long, sloping window channels and the New Haven's automotive-influenced 0365 Class, represent the last word in such cabs. The One-Spot had another body feature which was to find a later-day disciple. This was articulation at its center, to keep the full weight of the machine in fixed relation to the trucks. The follower was the Milwaukee Road, whose multi-wheeled, bi-polar gearless locomotives have three hinged cab sections, permitting them to snake to the sharpest curves with practically no overhang.

Ultra-utilitarian companion of the steeple cab is the more widely used box cab, which is precisely what its name implies. Placing the engine crew at the front end of an oblong body, it permits a totally unobstructed view of the rails ahead, but affords practically no protection in the event of a collision. To rectify this condition, a few roads, notably the New York Central, the Milwaukee and the New Haven, have provided a slight extension of articulated engine beds to serve as buffers in the event of a collision.

With the possible exception of pantagraphs, air compressor and the blunt stack of an oil heater, the cab, regardless of type, gives little hint of the intricate power apparatus concealed within it—a main transformer to cut down high voltage to the requirements of the traction motors in the case of trolley-fed alternating current, or a resistance unit where direct current is used. Control equipment; blowers to keep the traction motors cool; and in some instances, as we have already pointed out, regenerative braking mechanisms. Then there are the multiple sand reservoirs, an air compressor for the braking system, and, of course, two completely-equipped operating compartments.

It is not our purpose to consider the intricate workings of the many electrical devices. That is a story for

the technician in the field. But we are concerned with the heart of the juice jack; its traction motor and means of power application to the driving wheels. It would seem a very simple matter to transmit rotary motion. However, any system of this kind is inseparable from the problem of weight distribution and equalization of the locomotive as a whole. Thus a form of drive which may be entirely satisfactory in one type of service may prove entirely inadequate for another. To realize the importance of this condition, bear in mind that more than half the tonnage of the juice jack is comprised of electrical equipment.

BRIEFLY, we can break down all forms of mechanical transmission into four divisions: direct geared drive, gearless drive, gear-and-quill drive, and side-rod drive. The first method, which had its origin on street railway and interurban cars, employs a motor, pivoted at one end on the driving axle, and flexibly supported by the truck-frame on the other. This permits the gears to maintain mesh regardless of any vertical movement of the wheels, but has the disadvantage of excessive "dead" or unsprung weight (that of the gear and approximately five-eighths of the motor). Experience has proved that while an arrangement of this kind is satisfactory for slow-speed work with light power, it is not suited to fast running in the case of heavy engines.

Gearless drives, due to their simplicity of design, have met with greater favor from the first. Here the armature, or rotating part of the motor, is mounted either directly on the axle or upon a hollow shaft or quill surrounding it. In the latter event the quill has a disc at one or both ends, with lugs projecting out between the spokes of the driving wheel. Each lug, in turn, contains a cup into which is fitted a coil spring. When the armature turns, these springs transmit power to the spokes with a cushioning action. Further, they permit the axle to move up and down within the quill, with which it has no direct connection. The same feature makes it possible to suspend the motor and hollow shaft in a shock-absorbing cradle.

While in many ways the gearless drive is ideal, it too has its disadvantages. One is an abnormally low placement of motor weight. An engine so equipped does not take curves with the slight "rolling" action which characterizes the machine with a higher center of gravity. As a result there is a sharp lateral thrust on curves, which imposes undue strain upon the rail structure. Direct drive also makes it necessary for the armature to revolve at the comparatively low speed of the traction wheels. Thus the motor must be larger and more powerful in proportion to the work done than one which makes use of reduction gearing.

To meet these two conditions the quill drive, used in conjunction with a motor or motors placed above it and gear-connected to the hollow tube, has come to be standard design for most present-day high-speed juice jacks. Particularly favored is the so-called "twin motor," whose two armature pinions mesh with a single gear.

The fourth transmission system is familiar to those of our readers living in the New York area or the West Virginia coal regions. This is the side-rod drive. Originated in Europe and still widely used there, it combines side-rod coupled wheels with a main-rod connection to a cranked

motor-shaft or intermediate gear. The obvious advantages of such an arrangement are rugged construction, freedom from slippage without the use of power-balancing circuits, and the opportunity afforded to use a traction motor, or motors, of unusually large size. PRR was first to introduce it on this side of the Atlantic with its New York Terminal-serving DD-1 and L-5 classes, together with one large FF-1 experimental freight engine. The Norfolk & Western and Virginian followed suit with two- and three-unit locomotives, respectively, for use in services already described. The latter road's eleven juice jacks, numbered 100 through 110 are the most powerful yet developed on this side of the Atlantic, having a maximum tractive effort of 187,550 pounds.

Impressive machines they are as with side-rods flapping lazily they clank up Clark's Gap grade, wheeling coal trains that once broke the hearts of mighty Mallets. But in another sense they mark the end of an era. An age when steam men held the reins and sought to back the juice jack into the same shafts. That day is over now, and each machine is on its own, backed with all the talent in the rail-engineering world.

NEW YORK CENTRAL luxury trains grow ever longer, but the diminutive "T" type toes the third-rail unconcernedly as she whisks her slate-gray charges up and down the Hudson. Will the road project electrification to Buffalo after the war? Skeptics, citing recurrent rumors of earlier days, say no. But there's still the Pennsylvania to consider. If its catenary poles march on to Pittsburgh, Niagara power plants may yet time the heart beats of the Central

Trainmaster

By DON LIVINGSTON
M-K-T Agent, Vinita, Okla.

MR. GRAHAM followed them outside and climbed into the cab

SWINGING down from the caboose of his work train, Dave Stoner hurried through wind-blown rain into the Marshfield depot. Dave was an alert young trainmaster on the Oil Belt & Western. He paused a moment in the waiting-room to remove his dripping hat and raincoat. While he was standing there, Superintendent Graham, large and bull-like, strode past him into the office. The Super also had ridden the train in from an inspection of the flooded area.

From outside came the lazy chugging of the air pump on engine 847. For the past three years this old girl had been used to rush flood-fighting material to gangs of laborers at various danger spots, deluged by the rising waters of Oklahoma Creek. Through the open door Dave could see "Rusty" Herrick, slicker-clad,

Dave Stoner Is Fired, But He Still Has a Job to Finish

puttering around the 847's drivers, and muttered to himself the hope that Mr. Graham would not notice who the engineer was. Already there had been enough trouble on the Seminole Division.

When Dave stepped inside the office, Mr. Graham was seated at the train-order desk talking rapidly on the dispatcher's phone. The Super's bulk overflowed the telegrapher's chair and a black cigar stub in his mouth gestured as he spoke.

"Water's three to twelve inches over the rails all through Pine Hollow," he was saying. "We've sandbagged some places, and unless the flow gets deeper it oughta hold. Trains can keep on comin' through on signal from the foremen. . ."

Jim Mosher, the Marshfield agent, greeted Dave with a friendly "Hello!" and handed him a telegram reporting on the track situation. Washouts north, washouts south! Trains marooned all over the district! Rain still sweeping down in big wet bunches! Half a dozen railroads of the Southwest were demoralized and frantically seeking some way to run their trains through. Over a 300-mile strip crossing five states the downpour had

spread ruin. And now the Seminole Division, the only route still open across the flood area, was groaning under the detoured traffic of three other railroads as well as its own.

Trainmaster Stoner had seen many emergencies in his years on the OB&W, but nothing else quite so bad as this. The wire report he now scanned told a critical story. Every siding between Rockland and Midway was full of trains. Two were regular passenger locals; three were troop specials. None of them had sufficient food and water to outlast a long delay. Eight freights, with tired and hungry crews, waited impatiently to weave their way through the traffic bottleneck.

Dave knew the dispatchers were doing their best. He realized what a strain they were up against. He visualized the DS office as he had seen it on similar occasions, the men with rings around their eyes and crowsfeet in their brows, gulping down mugs of black coffee and munching sandwiches while they plugged at the job. They were running the trains in groups, two or three north, then two or three south—an excellent bit of railroading; and yet Superintendent Graham was now raving at them for what he considered a stupid move.

The T.M. shook his head in annoyance. Mr. Graham was holding up important business on that overworked wire while he took time to criticize. Dave breathed a silent prayer that there would be no serious mistakes today. With conditions like they were, a mishap might be tragic.

Graham slammed the phone headpiece on its hook and wheeled to the agent's desk, obviously with the intention of writing a telegram, when the door opened and in walked Engineer Herrick. Dave groaned. He realized that this was the worst possible time for the Super to learn that Rusty was back in service. Mr. Graham had discharged the man for insubordination a year before. Rusty had been rated as one of the road's top-ranking runners, but his quick temper and stubborn will had displeased the Superintendent and led to his dismissal.

WHEN the war boom rolled over America, doubling and redoubling the traffic, Mr. Graham threw up his hands and demanded: "Where in heaven's name are we going to get men to handle this tonnage?"

"We'll hire 'em," Dave said calmly.

"Then hire 'em—shanghai 'em—I don't care how you do it, but get the men!"

The trainmaster repressed a grin. He was thinking of Rusty. He knew that Mr. Graham had an aversion to Rusty, and he didn't care to provoke the Super unnecessarily. This time it was clearly unavoidable. Rusty must be rehired—there were not enough men available for the work to be done. And so the name Herrick went back on the board.

But on this day of battling flood, the sight of Engineer Herrick, big and rawboned, did not fill the soul of Mr. Graham with joy. No matter how many enginemen were needed, the loud-voiced Super was not willing to concede the need for Rusty on his division.

As the hogger opened the door, he spoke to Dave, ignoring Graham. "Boss," he said, "how long will we be here? I ought to pack that main pin before we make a run. She's liable to heat."

"What's that?" Graham bellowed. "Mean to tell me you're running one of our engines?"

"Yes," Rusty nodded, "the 847."

"Why, dammit, I fired you a year ago!"

"Yes, Mr. Graham, but your road invited me back." He turned to the trainmaster. "Reckon I'd better pack—"

"Stoner, what's the meaning of this?" Graham interrupted. "Didn't I—"

"I put Herrick back to work a month ago," said the T.M. "You instructed me to hire men to run this pike and not be too particular."

"Overruled me, heh?" The deep voice was subdued now, but the ruddy face was white. "Stoner, you're fired!"

Dave was stunned. "Better think it over, Mr. Graham," he advised tensely. "I took you at your word when I reemployed Herrick."

"You had no authority to do so with-

out an okay from me." The big official turned to the engineer. "Herrick, stay off that engine! Catch the first train into Midway and call for your time!"

"Fine!" Rusty exclaimed, his eyes glinting. "And now that I'm not workin' I'll just attend to a little chore. Did you ever wonder about somethin', Mr. Graham?"

"I don't waste time on riddles," the Superintendent answered stiffly.

"But I do, and I'm hankerin' to know just how that slicked-down hair of yours would look with a gob of roadbed rubbed into it—"

Rusty reached out menacingly. Quick as a flash, Dave stepped behind and locked the runner's arms in a tight grip.

"Easy, fellow!" he cautioned. "A brawl won't help matters. Wait till we get the trains moving over the road before you start anything."

"We?" Rusty echoed. "Where d'ya get that 'we' stuff? You and I ain't movin' trains. We're just has-beens."

"Even so, let Mr. Graham do his job. Somebody's got to handle this situation."

"Okay," Rusty agreed.

He stalked over to the far and of the office, glaring out at the rain. Mr. Graham, keeping a wary eye on him, went back to the phone and got Ed Hyatt, the master mechanic.

"Ed," he bawled, "send me an engineer for the 847 on the work train . . . Yes, I said an engineer. Herrick can't pull trains on this road. I fired him, and he stays fired . . . What? . . . No, I won't let him bring the train in. I said, *send me an engineer!*"

He threw down the phone headpiece, snapped angrily at his cigar stub, buttoned up his raincoat, and stomped out the door.

The phone rang sharply and Dave answered. Ed Hyatt's voice came over the wire.

"Let me have Mr. Graham."

"He's gone out to the work train," Dave stated dully.

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"Is that you, Stoner? Tell the boss there's no hogger I can send to replace Herrick."

"That's no concern of mine. I'm not working for the OB&W any more."

"What's that?"

"I said it. Herrick and me's fired." Dave explained ungrammatically.

A low whistle came over the phone. "Well, I wish you'd send word to Mr. Graham that we have no engineers available."

The ex-trainmaster spoke to Jim Mosher. The agent donned his slicker and splashed outside. Three minutes later he came back with the Super, trailed by all remaining members of the work-train crew. Mr. Graham eased his bulk into a chair, reached for the phone and called Hyatt again.

"I'm tieing up the 847," he barked. "The crew will deadhead into Rockland on 94 to get their rest. Send a relief crew to take charge as soon as possible. I'll put an engine watchman on the 847 to keep her alive."

NUMBER 94 pulled up at the Marshfield depot with a string of East Coast oil tankers, and the work-train crew boarded her while she took water. Dave and Rusty remained in the office; they would go to Midway on the next southbound passenger train. The engineer yawned sleepily and stretched out on a desk at the back of the room. Mr. Graham, seated at the train-order desk with the phone to his ear, sent the agent to call an engine watchman.

Dave leaned back in his chair and gazed gloomily out the window at the slanting rain. Bitter though he was over Graham's injustice, he felt no regret at having rehired Rusty Herrick. In view of the shortage of enginemen, he had only followed his best judgment; and he believed the General Manager would uphold him when he appealed the case. Yes, there was little doubt in the mind of Dave Stoner that he would be re-instated; but he realized that, if he were, Mr. Graham would probably make his life miserable.

Traffic moved slowly past the waterbound station. A long troop special and then a detouring Rock Basin passenger train pulled cautiously northward. Dave knew that behind them would come the long overdue Number 10, the *Bobolink*, the road's pet "string of varnish," now two days late from repeated and often aimless detours over half a dozen flood-harassed lines since leaving the Gulf Coast. Graham stepped outside to listen for the *Bobolink*. Dave moved over to the phone and donned the headpiece. He heard the operator at Sadler excitedly talking to the dispatcher.

"Engine 586 on the *Bobolink* has thrown a side-rod. He's about a mile north of here. The brakeman came back and told me."

Dave heard the dispatcher groan and ask for details. He learned that the *Bobolink* occupied the main stem halfway between terminals with a disabled engine and had all traffic tied up. Furthermore, there was not a locomotive on the whole division available to relieve her.

Mr. Graham promptly blew up when he heard the news. "Take the nearest engine and send her back for the *Bobolink*," he yelled into the phone.

The reply came back that there was no power between Marshfield and Rockland except what was already handling passengers.

"But we can't back an engine clear out of Rockland!" the Super bellowed. "That would leave traffic tied up for three hours . . . What? . . . Sure, we've got the 847 here, but there's no crew to handle her. Start an engine out of Rockland immediately and give her right over everything! Get her down here!"

He paced savagely back and forth the length of the phone cord, chewing viciously on an unlighted cigar. Dave was doing some diagram work on a sheet of message clip. It was a makeshift train-sheet and it showed the delays which the emergency traffic was going to suffer on account of that broken-down engine. Rusty still lay on the table at the rear, hat over his face, dozing restlessly. Dave went back and

poked the engineer in the ribs, saying:

"Get up! We're going for the *Bobolink!*"

"We're what?" Rusty popped up from beneath his battered Stetson and stared open-mouthed.

"You and I are clearing the main line for traffic."

"Who the devil cares about the traffic?" Rusty snapped. "We're both unemployed now."

"But there are three hundred tired, hungry people on that *Bobolink* sitting out there in the flood," Dave argued, "and there are hundreds of carloads of war material trying to get through this bottleneck, and all being held up because there is no engine on the *Bobolink.*"

"And whose fault is it there's no engine on the *Bobolink?*"

"It isn't our fault, Rusty—not yet. But ten minutes from now it will be ours if we're not rolling the 847."

The engineer rolled over and pretended to go back to sleep.

"Rusty, you've got a brother on the Anzio beach-head," Dave reminded him sharply.

Herrick swung his feet clear of the table and stood up. "Okay, let's go!"

SUPERINTENDENT GRAHAM, busy on the phone, had not heard the discussion. He whirled in surprise when the ex-trainmaster tapped him on the shoulder, saying: "We're taking the 847 to get the *Bobolink.*"

"No, you're not," Graham snorted. "Keep your hands off the company's property! You forget—"

"Mister," said Dave, "I haven't forgotten there's a war on, whether you have or not."

He reached for the phone which the Super had dropped. Mr. Graham tried to stop him, but Rusty's big hand seized the official's collar and pulled him back. Then Dave spoke into the phone, told DS what he and Rusty were going to do.

The dispatcher's reply sounded positively jubilant: "Get the 847 rolling, Stoner! We'll hold a red board on all southbound traffic at Marshfield until you come back. Tell Herrick to take it easy through that water."

In five minutes Dave and Rusty had cut off the 847 and had her on the main line. Mr. Graham followed them outside and climbed into the cab, apparently deciding it was wiser to cooperate in such a move than to oppose it, saving face by appearing to take charge.

"We'll have to go slow backing through Pine Hollow," he shouted across the cab. "Track may be swung out of line."

Rusty's only comment was to squirt a stream of tobacco juice out the cab window. Down in Pine Hollow the track disappeared under the surface of a muddy lake which extended as far as the eye could reach. But the current, held back by the equally high waters of the flooded Arkansas below, was not swift.

With his head out the window and his hand on the throttle, Rusty guided the locomotive through the shimmering mass, his every sense keyed tight for the feel or sight of danger. Dave, in the fireman's seat, leaned out with cautious eyes guarding the course of the engine, unmindful of the rain that pelted his face. Superintendent Graham stood in the gangway, nervously chewing a cigar, watching the water splash and ripple before the movement of the tender trucks. Evidently he was too much concerned with the safety of their mission to assert further authority.

One mile, two miles, they moved at a speed little faster than a man would walk. Then suddenly Dave yelled, "Stop her!" and gestured violently to the man at the throttle. Something had disturbed the water, a long, rail-like object circling through the air. Rusty slammed on the brake. Dave saw the rear end of the tender swerve and settle as she came to a stop.

"Tender's on the ground!" he cried.

Pushing past Mr. Graham, the ex-trainmaster swung down into eighteen inches of water before his feet struck the roadbed. He splashed around to the end of the tender just as Rusty showed up from the other side. All wheels of the

rear tender truck were on the ties. Dave gingerly explored the roadbed with a foot.

"Nothing wrong with the track," he announced. "Ties and rails all intact. We must have hit something."

Rusty grunted. The upper half of his body was poked under the derailed tender. When he straightened up he was dragging some long wooden articles attached one to the other by steel fastenings.

"Found that mess deadheadin' a ride on the brake riggin'," he said. "What d'ya make of it?"

"Some farmer is short the tongue and neck yoke out of his cultivator," Dave replied.

"My Gawd!" Rusty exclaimed, glancing around at the broad expanse of water. "You don't reckon I've run into a cornfield, do you?"

HANGING out the gangway, Mr. Graham yelled: "What did you find—what derailed us?"

Dave motioned for him to come and see.

The Super hesitantly swung down into the water. "We've got to do something," he grumbled. "The whole railroad is tied up! Stoner, I want you to go and get help."

Dave shook his head. "We can rerail her without any help."

"In this water? Why, it'll take a work crew and probably the wrecker. Stoner, it's four miles back to Stotts. Hurry back there and phone for the big hook and the nearest section crew. We'll try rerailing her with frogs."

"Mr. Graham," Dave answered patiently, "it would take a man two hours to wade back to Stotts. It would take a section crew that long to wade back here, even if one is immediately available. Four hours gone and nothing done. We'll rerail her ourselves."

"Stoner, I told you to go to Stotts and phone for help."

Dave stood firm.

"I'm not working for you, Mr. Graham; I'm working for the OB&W Railroad—and Herrick and I are going to get this engine back on the rails."

Rusty already was invading the possom belly of the tank, from which he dragged out a frog. Abandoning all attempts at keeping dry, the two men dropped to their knees and placed the frog a few inches ahead of the derailed wheels.

"Reckon she'll stick?" Rusty asked.

"On those water-soaked ties and with the weight we've got to lift, she'd sure kick back."

"Then we'll spike her."

Driving a spike which was invisible in the muddy water, while crouched in a cramped position with only a few inches to swing the hammer, proved to be a difficult task. At length it was accomplished, much to the relief of Mr. Graham, who was momentarily growing more distressed at the delay.

But on the other side of the tank the difficulties were much greater. There the derailed wheels had cut into the ties, letting the body of the tender settle a few inches lower. There was scarcely room under the tank for a man to keep his face above water. Rusty went in with the spike and hammer, but after a blow or two he came up coughing.

"Only a blasted diver could work under there," he gasped.

Dave tried it next. He quickly saw what had happened to his friend. So close was his face to the surface of the water that every movement caused the water to splash up and nearly strangle him. He tried holding his breath while he swung the hammer; then he'd wait for the water to quiet down so he could breathe again. In a few minutes he crawled out, exhausted by the unusual task.

"Did you get it driven?" Mr. Graham asked.

"About halfway," Dave replied. "It hurts your wind."

"Here, let me try a whirl," the Super offered, seizing the hammer. "We've got to move this engine."

Mr. Graham lowered his bulky, raincoated form under the tank. They heard him grunting with the effort of getting into position to swing the hammer.

"Too bad the snipes can't see this,"

Rusty commented with a grin, as he tilted his head to shake the water out of one ear.

They could hear Graham splashing about and the muffled thud of the hammer. After several minutes the Superintendent crawled out, hammer in hand, his breath coming in jerky gasps. His appearance reminded Dave Stoner of a drowned pig.

"She's down to the head." Graham announced.

Dave detected in his voice a ring of triumph. Something had happened to the big brass collar. Dave hoped the effect was not merely temporary.

Next came the nerve-tightening task of pulling the derailed trucks back on the track. Rusty, at the throttle, kept his eyes on Dave's hands as the ex-trainmaster, watching the movement of wheels, signalled him ahead. Inch by inch the stubborn tank moved along in the water, like an amphibian, groaning with the twist as it swung up the lift of the frogs. Then, with a decided jolt, the flanges dropped down into place and the steel monster settled into position. Rusty opened the throttle cautiously, and the 847 was on her way again.

After they had started the *Bobolink* northward behind engine 847, the three men returned to Marshfield. They shed their soaked clothing in Jim Mosher's office and put on substitute garb which the agent had procured from a nearby store. In blue shirt and overalls, Superintendent Graham looked like a well-fed mechanic, but his dignity of position had not entirely vanished.

"Stoner," he said as he chewed on a fresh cigar, "you and Herrick did a good job today." He cleared his throat noisily. "I'm going to forget about your putting Herrick back to work without proper authority. You may both continue your jobs in the regular manner."

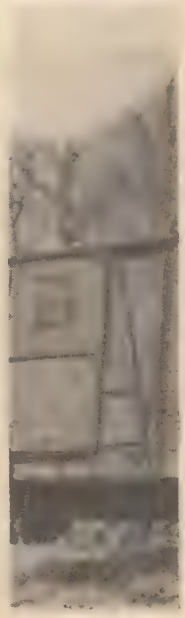
Yes, Dave told himself, something *did* happen to the boss out there in the flood.

"Thanks, Mr. Graham," he said aloud. "It took all three of us to do that job."

Rusty yawned again and remarked: "Now that everything is settled, maybe I can get some overdue shut-eye."

He ambled back to the rear, stretched himself out on the same old table, and soon was snoring. Dave and Mr. Graham settled down in chairs for a little snooze while they were waiting for the next passenger train. Before closing his eyes, the trainmaster glanced out the window and murmured sleepily:

"Looks like it's stopped raining at last. We can move a lot of traffic tomorrow."



One-Man Pike

ILLINOIS MIDLAND, a 2-mile line between Newark and Millington, Ill., connecting with the Burlington, is owned by Farmer's Grain Co. and operated by Bill Thorsen. It never has labor trouble or manpower shortage except when Bill doesn't feel like working. Photo shows him repairing track, shaking down ashes, looking out cab window, and about to fill tank with water piped from wayside creek

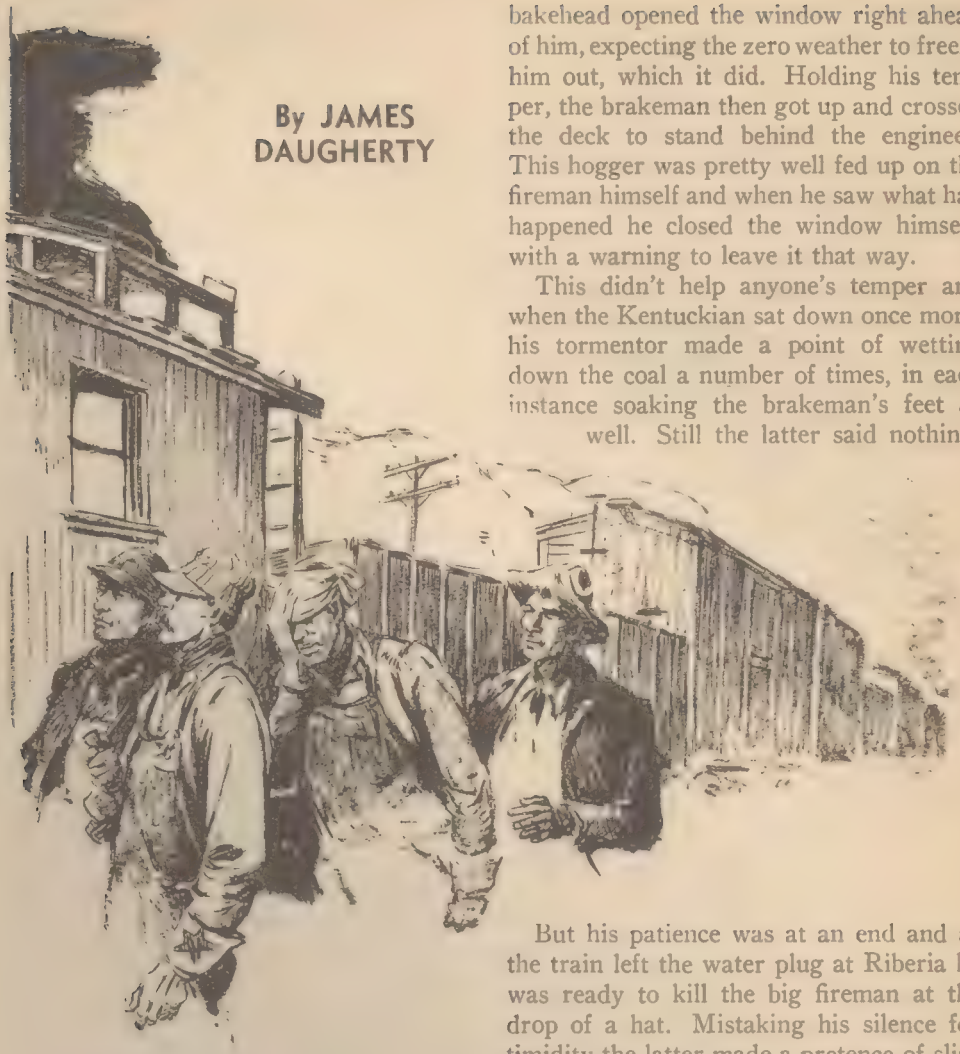
Railroad Jim

(Part 4)

AMONG the men I worked with during my seventeen years on the Cincinnati Southern and the Santa Fe, I can recall only a handful of really bad numbers. Topping the list was a fireman who ran out of Las Vegas around 1910. A brawny giant with dark forbidding features, he claimed to be a Canadian by birth, in which event our neighbor to the north was well rid of him. Never have I seen a worse bully. He made enemies wherever he went, but his pet hate seemed to be head brakemen. He goaded them at every turn, and because he was so big, no one had the sand to dish it back to him.

No one, that is, until a tall young fellow strayed in from the Cumberland knob country of my own home state, Kentucky.

By JAMES DAUGHERTY



It happened that I knew something about him, for I had railroaded with a relative of his, back East. What I had heard was the story of a good worker with a violent temper which had gotten him into serious trouble, so that he was now hiring out under an assumed name. Naturally I kept this information to myself, but when I saw him chalked up one night in place of my regular head brakeman, and realized that the bully would be firing our engine, I looked for sparks to fly.

From what I heard later, the Kentuckian quietly took his share of the long seatbox on the left side of the cab, whereupon the bakehead opened the window right ahead of him, expecting the zero weather to freeze him out, which it did. Holding his temper, the brakeman then got up and crossed the deck to stand behind the engineer. This hogger was pretty well fed up on the fireman himself and when he saw what had happened he closed the window himself, with a warning to leave it that way.

This didn't help anyone's temper and when the Kentuckian sat down once more, his tormentor made a point of wetting down the coal a number of times, in each instance soaking the brakeman's feet as well. Still the latter said nothing.

But his patience was at an end and as the train left the water plug at Riberia he was ready to kill the big fireman at the drop of a hat. Mistaking his silence for timidity the latter made a pretence of slipping just as he was raising a scoopful of coal to the firedoor. The Kentuckian had his sodden shoes propped up against the oil-warming pan in an attempt to dry them and the fireman neatly knocked them down, at the same time toppling the brakie to the deck. Swift as a timber rattler, the big boy from the Cumberland knob country lashed up and drove his fist into the other's face. The bully fell like a bludgeoned ox, his right eye knocked completely from its socket. There was a second crash as his head struck the metal coal gate and before he could slide on down to the metal apron the brakie was at his

throat, choking his tongue out and at the same time reaching for his knife. Seeing him open it with his teeth the engineer swung out with his foot and kicked the weapon out of his fist. With a flash it whizzed out through the gangway and buried itself in the deep snow below.

NOT until we took siding for Number 4, the Chicago Limited, at a point five miles beyond Riberia, did I find out what had happened. I was starting forward when I ran into the crew coming back to see me. The fireman had his head tied up in a clean white towel and looked done in. He and the brakeman said nothing, so it was up to the engineer to do the talking.

"Jim," he explained, "these two got into a fight down on the hill and he"—nodding toward the bandaged man—"is hurt pretty bad. I'm sure he's lost his eye and you know what that means for a fireman."

He swallowed and went on.

"Now here's what we, or they, rather, have in mind. Could you frame up some sort of plausible lie to give this thing the earmarks of an accident, instead of a fight? It'd mean compensation for the fireman and save the brakeman's job. And we'll all stand pat on anything you cook up."

I thought for a long time. This scrap was none of my doing—or the engineer's, for that matter. Neither did I have any use for the fireman who, given the chance, would have bullied me, along with all the rest. But I admired the brakeman's spunk and didn't want to see him lose out by it. So we shook hands all around, there in the moonlighted snow, high on the brow of Glorieta Mountain.

I had the fireman out of the way in the engine cab when Number 4 went by. Then we pulled ahead to Rowe, where there was a water station and coal chute. We did not need to stop for servicing there but by prearrangement the engineer spotted his tank under the spout, while I went to the office for orders.

Four or five minutes later the hogger burst into the office with his oil torch throwing dancing light upon an expression of mingled horror and excitement. His fireman, he told the operator and me, had just slipped on the icy tank while trying to pull the water spout around, and in falling, had somehow struck his eye, injuring it so badly that he was in no condition to go on.

It was a piece of artistry, that acting, worthy of any stage. And our plot ranked with the best. Now it was my duty to wire details to the master mechanic at Las Vegas. The dispatcher soon had all arrangements worked out. Number 8 would pick up the injured man and I expressed my belief that we could make Albuquerque without another fireman, provided we didn't fill up to a double train at Lamy. This we did by putting our battling head brakeman to work with the scoop while I kept an eye on his regular job and my own.

My last recollection of the bully fireman was that of a completely whipped cur, sitting with an elbow on each knee, his face buried in his two huge hands. And though I was not to see him again I have never regarded the time as unduly long.

On my arrival back in Las Vegas the following night I met the company doctor and asked him how his new patient was making out. He shook his head.

"He's in a bad way," he said. "Eye gone and delirious. We had to strap him down because he seems to think he's fighting some brakeman."

Next morning, as I was signing up for Number 33, I learned that the big fellow was dead. It gave me a strange feeling to be mixed up in this affair. I never knew what kind of character this fireman was around his home, but if he showed the same bullying spirit there that had made him so hated on the road, his family must have been overjoyed to trade him for the bankroll of nine thousand five hundred dollars that his widow received. Not one penny of this would have come to her if the Santa Fe had known the true facts of the case.

EVERYTHING ran along smoothly for a time, and I had about made up my mind that the incident of the fireman's death had escaped all further official notice, when a nice-looking old gentleman came aboard my caboose one morning around the middle of April, just as we were pulling out of Las Vegas with an extra west. He introduced himself as Mr. Cleaves of Topeka, Kansas; said he wanted to ride over the mountain with me, and handed me his annual pass. Looking at it I noted that he was the chief claim adjuster of the Santa Fe.

"I have a little matter I'd like to take up with you as soon as you finish your wheel reports," he said.

Right then I knew that I was in for trouble. Putting a bold face on it, I told him that I was pleased to have him as a passenger and would be glad to give him any information I could. He beamed at that and no doubt set me down as an easy mark. But I had been up against claim adjusters before.

This one was a shrewd article. He must have returned from Blarney Castle especially for this inquisition, for he began by saying that my superintendent had assured him that I was one of his best conductors, honest, sober and industrious, and therefore to be believed in any statement which I made.

"Now, Mr. Daugherty," he went on affably, "I have only one question to ask you, and if you will tell me the truth, as I'm sure you intend to, it will settle the whole case. Isn't it a fact that your fireman on engine 1613 last January was injured in a fight with the head brakeman, rather than through an accident, as your report stated?"

I answered "No, sir," which, with my sham cordiality and offer of assistance, constituted lie number three.

At that he took his stand in front of me, just as an attorney would. He showed me page after page of scientific circumstantial evidence from various hospitals, institutions and doctors, maintaining that it would have been impossible for the big fireman to have suffered injury from so short a fall. In turn I told him that I did not pretend to be an authority on such matters; all I had done was to report conditions as I found them.

He argued all the way to Glorieta, growing more aggravated every minute. Before he left me I learned that a fractured skull had really been the cause of the fireman's death. But my questioner learned nothing. When he bade me goodbye at board Number 10, he shook his head and said that I was the hardest pill he had had the misfortune to meet in over forty years as a claim adjuster.

But if I thought I was through with him, I was mistaken. For a month and a half later, as I swung aboard my caboose one morning, I found him seated at my desk going over some more papers. I needed no introduction this time, but soon saw that he was in a very different mood from the one he had adopted before.

"Daugherty," he said, omitting the Mr., "this is my second trip down here and it's going to be my last. You know that you lied to me and you also know that the lie stands to cost you your job. Now come clean and I may be able to save it for you."

He paused for a long breath and I cut in.

"Mr. Cleaves," I told him, "I have faced death and danger on this old mountain many a blizzardy night when you were in a safe, warm bed, asleep. Perhaps I could not do what you are doing, but I'm certain you'd never be able to handle my job. So you don't scare me. You have no proof that this fireman died as the result of a fight or you wouldn't have come back. By the same token you cannot prove me a liar and if you call me one again, old as you are I'll thrash some good manners into you."

I honestly believe that this outburst of temper on my part convinced him of my innocence more than all of the agreeable answers which I had given him before. He said not another word until we reached Glorieta, but stood looking out of the window at the strange wild country through

which we were passing. When he got off he proffered his hand.

"No malice," he said. "I hope we'll meet again some day, under more pleasant circumstances."

I am not trying to convey the idea that what I did was right. But this is my life story and if I fail to tell of my own mistakes and shortcomings it would not be worthy of your time and thought.

ALL THE TIME I battled the dangers of Glorieta Mountain, I had been bolstered up by the thought that some day I would have a truly worthwhile job. Then had come talk of a cut-off route from Dalies, New Mexico, to a point on the main line up in Kansas. Surveys were made and eventually a new route was projected which cut out the Glorieta and Raton Mountains. Because it left the original line to cross the Rio Grande at Belen, New Mexico, thirty miles south of Albuquerque, it became known as the Belen Cut-off. I hate the name yet, for this new trackage ran me off the Glorieta, which I had learned to love, in spite of its wild ways.

Diversion of trains to the new line began around the middle of March, 1910. By then I had advanced from the fifty-fifth conductor on the list to the eighth. But re-routing cut thirty crews from the board within the first two days and by the end of the week there were only seven left.

This put me in a bad spot, for I was one turn too old to go back and hold a regular job breaking, and one turn too young to retain my regular conductor status. All I could do if I wanted to remain in Las Vegas was to take my chances as an extra conductor.

I tried it for a spell, for I had bought a nice new home there and did not want to lose it. Too, as I've already said, I felt a deep attachment to the country. I had run every train between La Junta and Albuquerque many times; the mountains, canyons, bridges, fills, cuts and curves were all a part of my life, and one point on the division was even named for me. I had handled the first drag to be hauled over the big hill by a Mallet compound and the heaviest train (1538 tons). So you see there were a few things that the new route could not steal from me. When I finally left, after a four-month period on the extra board, during which I made less than one hundred dollars, I had no wish to transfer my seniority rights to another part of the system as many of the other men had done.

My wife wanted to go back East with the children, so I got passes for them, and made my own way up to Rawlins, Wyoming, hoping to find a better job on the Union Pacific. There I hired out as a brakeman, working through to Green River, Wyoming, one hundred and thirty-four miles west.

On the night of September 16th, 1910, we pulled out of town with forty-five loads and engine 308 on a meat run for Portland, Oregon. Our first stop was Waumsutter, for water. I was working the head end, and when the fireman dropped from the deck of the tank back into the engine cab I saw that he was holding his left wrist tightly with his right hand. He explained that he had slipped on the wet metal and given himself a painful sprain. Would I mind, he asked me, taking a turn at the scoop to help him out for a few miles?

Just as soon as he discovered that I could hit the corners, his wrist began to grow progressively worse, and things ended up by my firing all the way into Green River. When we pulled in, around six a.m., I was as black as a coal miner and plenty tired. The engineer patted me on the back and said he'd rather have me than his own fireman. Perhaps he was telling the truth, for the next morning someone gave me the payoff on the "injured" man. That sprained wrist was one of his regular acts, I learned; he was as lazy as the night was long, and had his own sense of humor in the bargain.

But he stood to suffer by it. For I caught the same engine on the return trip

and before we cleared the yards he complained of being sick. I lit into him, then, and he didn't say any more, but by the time we reached Point of Rocks I could see that this time he was far from kidding. At his request the operator called the dispatcher who, in turn, sent back a message asking me to fire the 308 into Rawlins. This I refused to do, even when he offered to okay my time slip for an extra trip. I knew that I could get into trouble over this, but I was as mad as an old setting hen.

When I got back to the engine cab the conductor had arrived with his orders and a check on the train register. But he was a newly promoted man and his train register was so badly mixed up that the engineer refused to go. So I returned to the office with him, took his time card and orders, and checked the register myself.

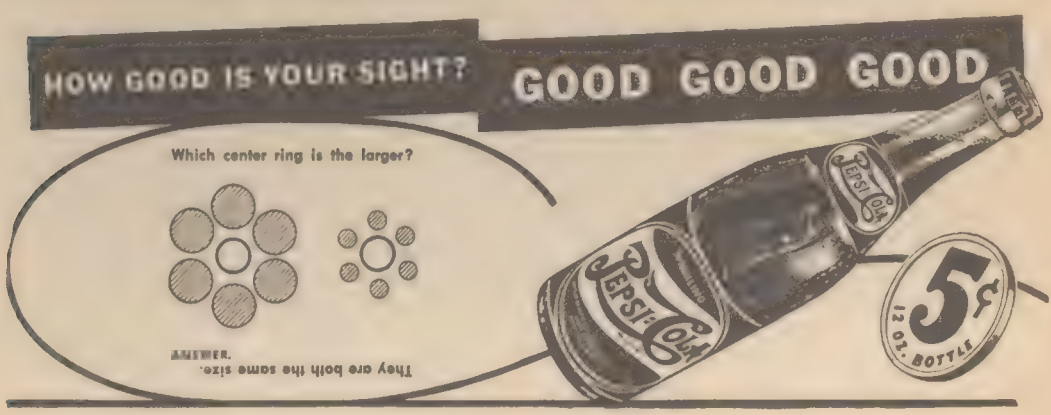
The engineer accepted this check, but it wasn't long before we were slowing for want of steam. I had taken my place on the fireman's seatbox and was looking straight ahead. But I could feel the hogger's eyes upon me and pretty soon he called across the dark cab to ask me whether I could run an engine. I told him that I had handled bigger ones than the 308, and on bad hills, too, but only where I was acquainted with the road.

"Never mind," he said, "climb over on my seatbox and watch for boards and blocks. I'll do the firing."

There were fifty-three miles of single track from Point of Rocks to Waumsutter, where a relief fireman was due to meet us. Getting the feel of the 308 I quickly let the engineer know that I didn't regard him as a sick friend. While he toiled with the scoop as I had done the night before, I cracked the throttle wide and it wasn't long before we were calling for the eastbound main at Waumsutter. There I resumed my regular duties, having been brakeman, fireman, conductor and engineer, all in the course of a single round trip. If an operator had played out, too, my score would have been complete.

TO MY SURPRISE, no official action resulted from this incident. But I didn't like the road job and after one more trip to Green River I resigned and re-hired in the Rawlins yard as helper on switching engine 1230, working from 8 a.m. to 7 p.m. It was my first experience in this work, but I liked it and took hold quickly.

One night early in October we got an order from the yardmaster to put four cars of bituminous on the coal chute. It so happened that our own engine was laid up for repairs and the switcher we had drawn in her place was in poor mechanical shape. To make things worse our regular engineer was off and we caught a newly promoted man from the extra board. This was his first day on the right hand side and he was naturally a bit timid. He had been doing all right, at that, until we got around to moving those hoppers up the ramp that led to the chute.



The structure was very old and resembled a rickety barn on stilts. At the far end stood a bumper post and directly beneath it was a little sand house. The night was cold, with a stiff wind blowing from the northwest. We took the four empties from the trestle, picked up the new loads, tested the air and made a run for the ramp.

Worried lest he overshot it, the new engineer eased off on the throttle before he was a third of the way up. As a result the drivers lost their grip on the rails and we skidded back down again. A second try was no better, and this time the foreman of the crew, who was riding the engine cab, lost his patience. From my post on the car ahead of the switcher I could hear him giving a loud and stinging lecture on timidity which I thought was entirely out of line, in view of the good showing which the young man had made all day. He must have taken it to heart, however, for on the third try he gave the old mill all she had.

When we were halfway up the incline I saw that we were going too fast and swung a slow signal. But he kept right on working steam. My partner at the head end of the cut of cars seized up the situation and leaped from his dangerous perch into one of the coal pockets. A split second later there was a terrifying crash as the bumping post gave way and fell upon the sandhouse, followed by the first two cars and a cascade of coal from the third hopper, which hung teetering over the edge of the trestle.

The car I was on remained upright, as if hesitating to make the plunge. The whole interior of the coal chute was full of steam, for the engineer had opened the blow-off cocks. Fortunately the wind cleared most of it out quickly and after clubbing down the hand brake of the hopper car, I cut off the air ahead of the locomotive and made my way to the switchman who had jumped. A broken arm appeared to be the worst of his injuries.

This accident was no fault of the young engineer. Even the foreman conceded that he had tried to take my signal, but that his throttle had stuck and all he could do was to set his brake valve in emergency and jerk open the blow-off cock to reduce boiler pressure in case the air leaked off.

Soon after this I became foreman of the same job. Frankly I didn't want it, for there was too much responsibility in proportion to the small difference in pay. But I bided my time and on October 16th I was given charge of the night-train engine at the passenger station. Our hours were from 7 p.m. until 7 a.m., with practically no "spot", for we had most of the important trains to handle.

Rawlins Yard slopes east and it was customary for freight crews from Green River to cut off their cabooses as they pulled in, and drop them into the caboose track leading off the old main line. One of my many jobs was to keep these cars in the clear, for the old main served as a kind of thoroughfare for yard engines.

On the morning of November 1st we had a heavy snowfall to buck, and it was after 2 a.m. before we found a chance to eat. Then I went down to the shop yard with the two cars which required light repairs. I had been instructed to stay with them until they were ready to roll again, haul them back, and cut them into the same train they had been taken from.

Eastbound movements were heavy that night and while I was making my trip to the shop yard a number of freights dropped their cabooses in. As luck would have it the last two fouled the old main, and before I could get back to them, an engine coming up with two outgoing cabins crashed into them, reducing all four cars to kindling wood and injuring several men. I figured I'd be the goat for this wreck and I was right. Placing a dining car on the rear end of Number 6, my last job for the Union Pacific, I cleared out and went to bed.

To top everything, the man who had really caused the smashup was put on my job the following night. According to reports, he chased around like a wild man, trying to do everything up brown. All

went well until the early morning hour when Number 6 blew for Rawlins. Then he suddenly remembered her diner and realized that he stood to delay the train's departure. Rushing in with the switcher, he picked up the car without coupling the airbrake hose. In that ill-advised moment a helper reminded him that I had never failed to do this. Turning on him angrily the new foreman said: "Yes, and look where Daugherty is, tonight."

He had to go nearly three-quarters of a mile to reach a crossover, and by the time he got the diner on the eastbound main the conductor of Number 6 was out in the snow, cussing all switchmen in general and the foreman in particular.

As the yard crew came down behind Number 6, the engineer applied the brakes. The sudden stop in some way caused the dining car to uncouple and with no air in her auxiliary reservoir she ran wild into the rear end of the train. A number of Pullman passengers and members of the diner crew were badly shaken up.

THE FOLLOWING DAY I received my pay and started back to the land of cactus, sand and sunshine. I had been promised a job as brakeman in the Santa Fe, working out of Winslow, Arizona, over Bill Williams Mountain to Seligman, a 143-mile division.

I took the Union Pacific to Denver, the Denver & Rio Grande to Trinidad, and my old friend, Santa Fe Number 7, south of there. Now every turn of the drivers was bringing me nearer to Las Vegas and the little home I had worked so hard to own.

I still remember the brakeman coming through the car in which I was riding to announce that there would be a twenty-five minute stop in the town for supper. I think everyone else got off, but I would have choked had I tried to eat in that ghost of a once-flourishing railroad community. From my car window I could see the main street, leading directly west beyond the depot. You could have turned a machine gun down that thoroughfare and not killed half a dozen people and a stray dog or two.

On my arrival at Winslow I was deadheaded to Ary cinder pit—now called Nevin pit—where the Santa Fe was at that time laying double track. Here I found grading camps, steam shovels and work trains aplenty, and it wasn't long before I was promoted to conductor again. For a time luck seemed to be with me.

Then on October 16th I was sent to Williams to run a water train. For those who have not been there, I should explain that a branch runs north from that point to the south rim of the Grand Canyon, sixty-four miles away. There the Santa Fe has extensive hotel facilities. All of the water used in those buildings is hauled in via main line and branch from Belmont and Del Rio. You may ask why the raging torrent of the Colorado River is not used, instead, but the cost of pumping it more than five thousand vertical feet would have been considerably more than the ninety-dollars-a-day expense of operating the water train.

My first run in this service began on the morning of October 17th, when I left Williams at eleven o'clock with ten tank cars and four loads of miscellaneous freight. On reporting for orders I had found a message from the trainmaster saying that it was urgent that we make a good run, as the water in the main tank on the south rim was several feet below the "insurance line." That is to say, it did not come up to the point where adequate fire protection could be accorded the hotel buildings. Thus all insurance automatically expired.

Anxious to oblige, I gave our engineer the hurry-up message.

"Okay, Jim," he said, patting the boilerhead of the 791 with a piece of waste. "She's a good one and I'll wind her up for you."

In a few minutes our delayed water train was on her way in a cloud of dust. We had a long downhill roll after passing Valle, which took us out onto a wooden bridge spanning a dry run known as Red Horse Wash. This structure stood some

sixteen feet high at the center, and had a length of ninety feet. We struck it plenty fast and the engine pitched and tossed but cleared the structure safely, along with one car, a flat loaded with flowers and shrubs intended for the hotel grounds at the canyon. But the tank car following her stubbed her toe and careened down into the gulch, dragging everything but the caboose in her wake. Miraculously this cabin stopped right at the edge of the run, so that not a man among us was injured or even shaken up.

Before the dust settled I had my watch out checking our running time to this point. With the 791 rated at thirty-five miles per hour I found that I was not due for another eighteen minutes. The trainmaster had covered himself by not raising our speed limit when he put through the hurry-up order, and things looked pretty black until I recalled that there was not a single telegraph office on the branch.

For this reason our caboose was equipped with a portable telephone. I quickly arranged it, put the earphones on and hooked a connection over the dispatcher's wire, according to our wall chart. The train dispatcher was at that moment talking to the railway agent at Grand Cayon, and the first word I heard spoken was my own name.

"Daugherty," he said, "left Williams at eleven a.m. He has ten cars of water for you and there are two more trains of sixteen cars each due to get out of Williams late this afternoon. That will put you well above the insurance line."

As I listened to this conversation I was almost afraid to breathe lest the dispatcher hear me. For I intended to wait until we should normally arrive at Red Horse Wash before reporting our spill.

While I was still listening, Williams cut in to report a wrecker extra ready to depart. This outfit had been over from Winslow picking up some cars at the sawmill when I left town, and I was in hopes of contacting them before they started back. However it would be eleven minutes more before I could put in my call, and inside of four I heard the dispatcher sending them on their way.

I was playing a dirty trick by keeping silent, for they would reach Flagstaff before the dispatcher could catch them again. On the other hand, they'd find it easier to make this extra sixty-eight mile trip than the engineer and I would to land new jobs.

When I finally broke in on the wire it was in the middle of a train order, to give the impression that I had just made contact and was in a hurry.

"Why didn't you call me before the wrecker left town?" the dispatcher snapped.

"Because there didn't seem to be much point in it before I had the accident," I said.

It was thirty hours before a temporary bridge was finally thrown across the run, and traffic resumed to and from the south rim. Needless to say the water trains came first—three of them—and by that time the supply at Grand Canyon was really low. An investigation of the wreck brought out no suspicious circumstances and not one of us received a demerit.

A WEEK LATER the regular water train conductor reported for his run and I went back to Winslow. There I worked on the extra board until I was assigned to a regular work train on July 5th, 1912. Our job was to haul dirt for a construction company which was building a large fill for the new eastbound line, near Seligman. All of the engines, cars and equipment belonged to this outfit. They also supplied the personnel to operate them, except for the conductors. We were instructed by the railroad to arrange the runs to suit ourselves, promoting the progress of the job with an eye to established schedules and their safety. These instructions reminded me of my water train message; placing all responsibility for a tough piece of railroading squarely upon the shoulders of the conductor.

The fill we were to build was about a mile in length and thirty-seven feet high at the deepest part of the sag. Earth had

to be hauled six miles over the main line, and each train consisted of an engine and ten cars, each with a capacity of twenty-two yards. The first two miles west of our camp lay through a rugged canyon, with sheer rock walls on either hand. The deepest cut had a forty-foot face on the north side of the track.

Soon after I started on the job I noticed a crack in this escarpment. I said nothing at first, but kept an eye on it from day to day. Within a week I could see daylight through it, which confirmed my suspicion that it was spreading. I called the attention of the other two conductors to this fact, but they only laughed and said, "Jim, you're getting cold feet." Shortly afterward our trainmaster stopped by and I took him, along with the construction foreman, to the spot. By this time the crevice was between two and three feet wide.

"Perhaps I'm talking out of turn," I said, "but this stone is going to fall before the job is finished, and if the vibration of a passing train does it, the chances are that somebody will get hurt. Why not bring your steam wrecker over, catch a time when traffic is light, and drop it with a charge of dynamite?"

Neither man spoke for a moment, and then the trainmaster said: "Let's wait a few more days and see what happens."

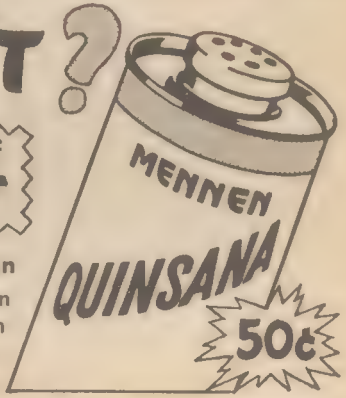
On the morning of August 12th I took a load of dirt in with instructions to dump it at the east end of the fill. To do this the engine was placed behind the cars so that it would not bog down the new, soft track. The head brakeman and I rode the forward car, while some seventy-five laborers were seated back near the locomotive. Our speed did not exceed ten miles per hour as we proceeded through the canyon.

Just as we approached the great wall of loose stone, I saw it start to totter, and screaming to the brakeman I swung an emergency stop signal. My companion took one look at the huge, crumbling mass of rock and jumped from the train. For my part I turned and skinned back over the cars of loose dirt toward the engine. I had no more than time to clear the first coupling before a resounding roar drowned out all other sounds. The stone had landed squarely on our first gondola, mashing it down to the track like a cardboard box.

A brief survey showed that the brakeman was only slightly injured, and with the nine undamaged cars we flagged our way back to camp. There our foreman and the other two conductors rushed over to find out what was wrong. Telling them to walk down the canyon and see for themselves, I went into the office and wired the following message to Winslow:

"Camp 421—August 12th, 1912. Large ledge of stone fell across my train at entrance to canyon, 6:05 a.m. Brakeman McFarland slightly injured. No others hurt. Start steam wrecker with full equipment at once. Hold westbound trains at Ash Fork.

James Daugherty, Work Extra 2183."

HAVE YOU GOT IT?
Check Yourself for Symptoms of
ATHLETE'S FOOT
☐ Cracks, peeling between toes ☐ Itching ☐ Soggy skin
New scientific 2-way treatment with QUINSANA powder—on feet and in shoes—is producing amazing results. In tests on thousands of persons, practically all cases of Athlete's Foot cleared up quickly with Quinsana—used today by millions.


It was generally believed that heavy blasting near this point had caused the crack in the ledge and made it fall. The boss took a gang of foreign laborers down to see what could be done and they soon returned, laughing.

One big fellow said: "Boss man crazy; think men push rock over, rock as big as engine."

I shrugged and he patted me on the back.

FOUR DAYS after the big slide, my wife was sent to Williams Hospital. Coming back from a visit with her on Sunday night the passenger train on which I was riding ran into a very hard rain—something unusual for that desert country. Passing the pit where all the soil for our grading had been excavated I saw that it was full of water and in the center of that pool stood the shovel and two of our trains.

It just so happened that my own outfit had been loaded late Saturday afternoon and pulled out of the pit onto higher ground. On Monday morning, then, the boss instructed me to take this train to Seligman fill and unload it at the west end. Half the laborers were to go with me, while the remainder stayed at the pit to dig a drainage ditch. After arriving at the fill I was to haul back the ballast spreader, which required overhauling, and then run light to Crookton for six cars of water, return to the fill again, and bring the laborers in for dinner.

My orders were simple, because the big rain had apparently delayed many trains. One called for me to work extra from 6 a.m. to 9 p.m. between Crookton and Seligman, and another was a run late order on Number 3, the *California Limited*.

After spreading my trainload of fill I started back toward camp with plenty of time to get there for this train. But meanwhile, and of course without my knowledge, the engineer of one of the other construction mills talked the foreman and dispatcher into allowing him to take this locomotive down to Seligman for repairs. It was bad railroading on two scores. First, the engineer was not a Santa Fe employe and second, he was being let into my working limits without my knowing anything about it.

But it would have come out all right, at that, because he had instructions to take siding for us at Pan, and plenty of time in which to make it. When he arrived there, however, he found the siding blocked by a dead train, and took a chance on running by, so that he could back in on the west end.

Meanwhile my work extra—Engine 672 and the ballast spreader—was coming up the hill on a blind curve, running between eighteen and twenty miles per hour. Two days previously one of our trains had dumped twenty-two cars of volcanic cinders along this stretch of line and they had not yet been hauled off. In its raised position the spreading wing on the engineer's side was just high enough to clear the mounds. I was standing on the hoisting frame, with not the slightest notion that anything would be coming west ahead of Number 3, when we met the other construction engine head on.

I had little time to think and I made a bad guess. For my jump into the cinders did not clear the butt of the wing. It struck and knocked me face down into the cinders, then scraped over and buried me alive.

When I was finally pulled out again the crew thought I was dead. My right ankle was broken, I had seven deep scalp wounds, one ear was torn half off, the skin had ripped from the backs of my hands and kneecaps, my back was a bloody mess from hip to shoulder, and a couple of teeth had broken through my lower lip. But worse than my physical pain in that awful moment was the discovery that I could not see. As I was laid back on the spreader car to return to Seligman for first aid, the full horror of the situation came to me. I had always been a fanatic about seeing new places and the idea of spending the rest of my life in unending darkness, unable to look upon my loved ones, or to watch the shining rails, the changing order boards, the great snow-

SHE LET GO with a roar that drowned all other sounds

capped mountains and the forested valleys, nearly drove me mad. I wanted to cry out, but that would do no good. Neither would the cursing which for years had been my only outlet for all trouble of this kind. You may think it strange then, that I prayed. Not as one should, perhaps, for I had lost contact with God for many years and did not know how to begin. But I told myself that He must hear me, even on this lonely desert, and as I lay on the hard board floor, sightless under a dazzling summer sun, I gripped my hands until they ached, declaring with every click of the car wheels that He had never forsaken me and would not do so now.

And He did not. By the time I arrived at the hotel in Seligman I could make out shadowy patterns which soon took on shape and color. I was no longer blind.

THE COMPANY DOCTOR at Seligman did the best he could for me before I was put on a train for a more thorough overhauling in the Santa Fe Coast Line Hospital. I was carried over the Number 9 on a stretcher, but the Pullman conductor refused to let me aboard. He said that he had no lower berths open and added that I would be offensive to his passengers. While the argument was going on a distinguished looking man whose name I never learned but to whom I owe a lasting debt of gratitude, stepped up and said, "I have a lower berth through to Los Angeles. Put this injured man in it, and, son, you are welcome. I'm quite able to climb into an upper berth, and if there are none available, you are still welcome."

It sometimes takes a situation like this to bring out the goodness of one's fellow men and during the four hundred and seventy-five mile trip across the desert country I was the object of untiring kindness from all of the passengers of that car. They stanched my wounds as best they could, and took turns fanning me, for this was the hottest season of the year. Back home, too, neighbors were looking after my little ones, for, as you will remember, their mother was in Williams.

I spent a miserable month in the Los Angeles hospital and left there somewhat of a cripple, able to hobble about only with the aid of a cane.

I did not realize how many friends I had until I returned to Winslow. There the trainsmaster, dispatchers, construction boss, train and engine crews, the steam

Rare old photo from Cary T. Ray, 761 N. Craig Ave., Pasadena 7, Calif.

THE *JUNIOR*, on Detroit, Eel River & Illinois road (*now Wabash*) at Auburn Jct., Ind., in 1877; Engr. Wm. A. Ray

shovel men and laborers all seemed glad to see me back. Few of the latter could speak English, but all knew how to smile and squeeze your hand. My little girl and boy ran out to greet me with outstretched arms and hid their disappointment that I could no longer toss them up on my back and play wild-west bronco. Only my wife seemed uncohcerned. The tragedy of our cross purpose temperaments came to me in all of its bitterness then, and the pain in my heart was far worse to bear than any physical injury.

IN MARCH of the following year, she left me. I was away from home at the time and when I returned, I held a folded and re-folded letter in my hand. Briefly it told me that she was tired of it all, was taking the children back to Kentucky, and intended to sue for divorce.

I paid my rent, found a small room and asked to be left completely alone. I spent what were among the darkest hours of my life in that little cell, but when I came out it was with the resolution to bury the past in my work. My friends were sympathetic and I believe I did a reasonable job of convincing them that I could take misfortune in my stride. But I did not fool myself. I thought often of the Kentucky farm life for which my wife had professed such longing; would things have worked out better there?

And then on July 7th, 1915, fate, working in her strange way, solved the dilemna. I had been called the night before to leave Seligman at 10 p.m., on Extra East 1681. I was braking ahead and we had fifty-one loads and empties, 1433 tons. Right behind the engine were three tanks of fuel oil, the third of which was a bad order car. But we did not know this when we left Seligman.

The fault was that there was no cap on the loading dome and oil had splashed out in transit, covering the running board. Leaving our terminal, this oil was warm and sticky, like coarse molasses, but after we got up on the mountain, it turned as slick as ice.

We had breakfast at Williams around

2:45 a.m. and after taking on water, prepared to set out several stock cars just behind the tanks. I was to handle this job, while the conductor went to the phone to find out when Number 2, a fast mail train, could be expected.

After dropping off the stock cars I started across the tanks toward the engine. But while I was going around the bad order car I suddenly slipped on its glazed running board and down I went upon the rail. A rumbling wheel caught my right foot—then all went dark.

They told me later that the engineer saw my lantern fall and stopped at once on investigate. I was found standing upright in the darkness, leaning against one of the cars. Unconscious, I still clutched my battered lantern and the rest of the crew found it impossible to take it from me until they cut the bail and pulled it through my hand. I fought like a wild animal when attempts were made to put me aboard Number 2, and did not regain consciousness until the train reached Flagstaff.

I HAVE NO WISH to bore you with an account of the things that followed; of the two years during which doctors in Los Angeles operated six times in misguided attempts to save my foot. Of my one attempt to go back on the road as a passenger conductor, working between Williams and Grand Canyon, a job which lasted from May 10th until September 1st, 1917, when pain again drove me to seek surgical relief, this time at the famous Mayo Hospital in Rochester, Minnesota. Of my return to Kentucky where my children no longer knew me because my hair had turned white and my face was lined with age. Of the last merciful trip to Christ Hospital in Cincinnati, which cost me my leg but brought me freedom from pain at last.

Nor will I go into the seventeen years during which my wife and I were reunited, and fought a losing battle with the Kentucky hillside farm which she had always wanted. Our divorce, ironically enough, was granted in the same old gray courthouse which had freed my mother from her first unhappy marriage.

But as I listen to today's great Southern engines, crying through the night, I have my memories which can never be taken from me—memories of the nearly four hundred thousand miles which I traveled as a trainman. Picture, if you can, a rail argosy with 4,432 engines, 114,395 freight cars, and 1,645 passenger coaches and Pullmans. Now place this train upon the tracks of the Southern Railway, with its rear car in the Cincinnati Union Station. It will be a long walk over the tops; down through Lexington and Chattanooga and Atlanta; Tuscaloosa, Meridian, New Orleans—yes, and fifty-eight miles beyond. That is my memory train.

THE END

Photo by Thomas O. Acree, Cincinnati, Ohio

COLOR HARMONY. Green engine on the Southern Railway, with a background of foliage, wheels her human cargo along the ***Queen & Crescent*** route

Photo by L. E. Griffith, Box 133, Somonauk, Ill.

EXPOSITION FLYER, CB&Q-D&RGW-WP passenger (right), with No. 4001, a CB&QS-4a Hudson type, at the head end, highballs past Extra No. 5630 on siding at Somonauk, Ill. All Burlington freights run extra through this territory now

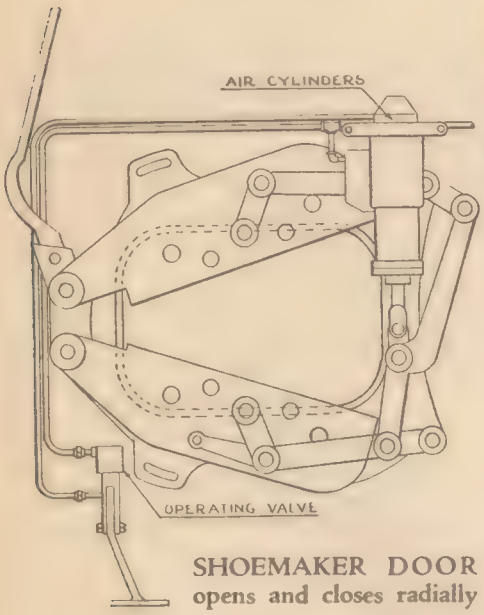
EARLY TYPE of air-operated firedoor opened vertically on guides

Light of the Lantern

Firedoors

TIME: any hot summer afternoon, thirty years ago—"the good old days." Place: inside the cab of any coal-burning hog. Characters: one sweating fireman and a grumpy engineer. Sound effects: plenty of old-fashioned cussing. It's a sure thing that the old head is calling for more steam and the tallowpot wishes he'd never traded a pitchfork for a No. 5 scoop. Solid white heat seems to pour out into the cab whenever that handle is lifted. But just the same, the freight must get over the road, and it's fire or quit.

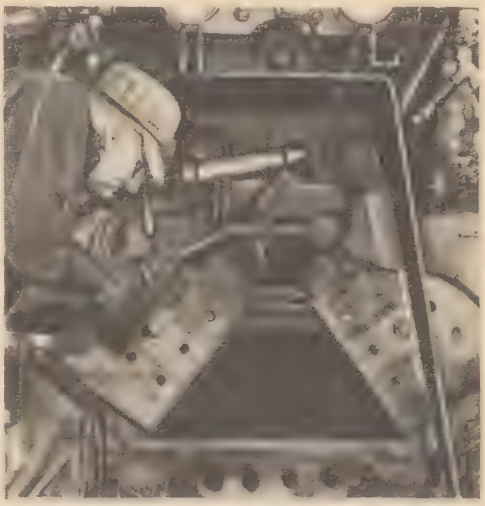
So the bakehead gives a hefty pull to the chain that hangs from the cab ceiling to lift the door from the latched position. The cover swings open heavily, and blasts of fiery heat rush into the cab. Ducking his head between his shoulders, the fireboy grabs his scoop and starts slinging the black diamonds through the opening. When she's built up enough, a swift kick or another heave on the chain bangs the door shut, and the fireman, mopping his face with an already wet shirtsleeve, backs into the gangway or sticks his head out of the window for a breath of much-needed air.



SHOEMAKER DOOR
opens and closes radially

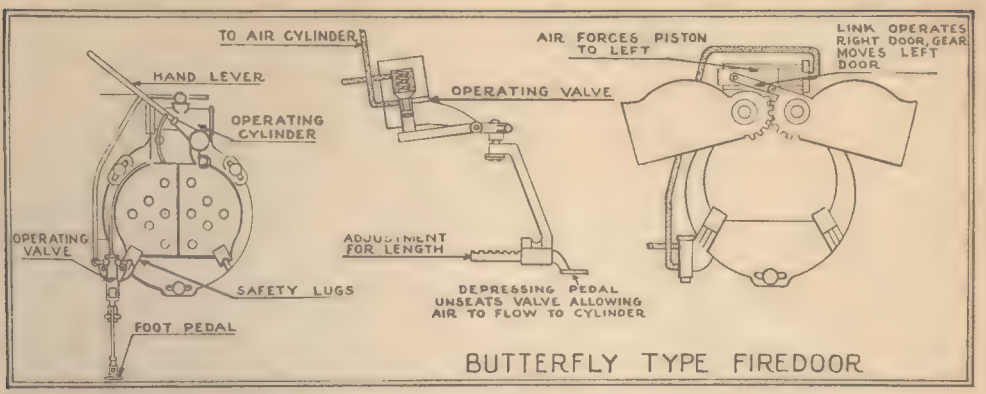
In the days before the first World War, the cover for the firebox opening was nothing but a hinged affair opening outward like an ordinary door, manually operated by the chain attached to the handle and fastened to the cab roof. It took so much time and effort to work the door that once opened, it stayed that way until a dozen or more loads of coal were heaved through the opening. This haphazard method of firing was inefficient since it greatly added to the fluctuation in steam pressure. The man with the scoop didn't like it any better than the engineer, for during hot weather, the terrific heat kept him in a lather of sweat, with gloves and overalls smoldering. More than one tallowpot has thrown down his scoop right on the main line, to walk the cinder roadbed to the shade of some nearby farm.

BUTTERFLY door, so named because of its wing-like opening and closing motion, is popular type in use today. Hand lever is standard equipment, for operating door when air pressure is not available



But it wasn't exactly pity for the poor fireman that brought about changes in the design and operation of firedoors. ICC regulations governing this type of equipment were concerned with the safety of the engine crew and, indirectly, of the passengers aboard their train. Firebox failures were much more common then than now, and the force of an explosion invariably threw the door open, with fatal results to the men in the cab.

In the days of the chain door, boiler construction was still in the early stages of its development. Welding, universally employed in the building of fireboxes now, was not a common practice. The feedwater treatment remained to be perfected, and because of these lacks, flues and sheets leaked continually. Repairs had to be made frequently, and the working and caulking of leaky seams and flues pro-



SIMPLE OPERATION characterizes the Franklin product. Pedal, placed at convenient location on cab floor, opens valve (center) through which air enters cylinder; link operates one door, gear moves the other (right)

duced weaknesses that were prone to failure later. On boilers carrying a working steam pressure of two hundred pounds or more, a failure of any appreciable size within the firebox is liable to create a roaring inferno in the cab. As the steam is driven back through the firedoor opening, it carries with it flames and gases. The old-style closing did not prevent escape of these fumes into the cab, and an explosion easily opened the hinged door.

Accidents, to which the manually operated firedoor contributed, finally called forth ICC action, with the resulting regulation:

> Each locomotive shall have a mechanically operated firedoor . . . so constructed and maintained that it may be operated by pressure of the foot on a pedal or other suitable appliance, located on the floor of the cab or tender at a suitable distance from the firedoor, so that it may be conveniently operated by the person firing the locomotive. . .

The rules specified that oil-burning engines could have hand-operated doors, provided that construction permitted them to be "securely bolted in closed position" while the locomotive was running.

BEFORE this ruling became mandatory, however, several manufacturers had anticipated the need for better equipment of this type. Firedoors operated by compressed air seemed destined to meet the requirements, since this activating force was already in use on trains for braking, and the cross-compound pump would be capable of supplying the air needed. Steam pressure was tried by several designers, but this force was not entirely successful; air was economical and more easily handled.

At first, master mechanics frowned on the idea of an air-operated firedoor, because they doubted that the pump could take this added wear. Heavier power and longer trains required more air for braking, and numerous appliances, such as sanders and bell ringers, also used the compressor in their operation. But the greatest demands on the pump occurred when the locomotive was first coupled onto a long string of cars; at this period, when the reservoirs on the cars were being filled, none of the appliances was being used. Nowadays, with the big, one-hundred-fifty-cubic-feet-capacity pumps, the amount of air actually required by firedoor cylinders can be considered negligible.

The advantages of the automatic firedoor are apparent. Not only is it helpful to the fireman, relieving him of added labor and saving time, but it has become a great safety factor, and an aid to increased efficiency in locomotive operation.

Firebox explosions do not force the air-operated door to open, a factor which

means that the flames and gases can be controlled or driven through the grates and the ashpan. But the construction of the door itself helps to prevent firebox failures because it facilitates the proper care of flues and sheets.

When a locomotive is working to capacity and evaporating its maximum amount of water, combustion is so rapid that the flames in the firebox are at white heat. Temperature within the box may be in excess of 2500 F., and so intense that it is impossible to see more than a few feet inside the door. Under these conditions the proper entrance for air is through the ashpan and grates, where it can be united with the correct proportion of carbon in the coal. If it is allowed to enter in large quantities through the door, the cold air causes a noticeable reduction in temperature inside the box, and damage to firebox sheets may result.

Flues of modern engines are rolled, beaded, and generally welded to the rear sheet. If cold air strikes this hot metal, or concentrates on some particular section, it causes injurious stresses, due to contraction. At the flue sheet this may mean that the seal welds will break from the bead: the resulting leaky flues will create a steam failure. Cold air will have a similar effect on crown- or sidesheets; fireboxes are fabricated from several sheets of steel and butt-welded, and stresses caused by changes in temperature may make the seams crack, and staybolts leak past the threads and under the driven heads.

The clumsy method of opening and closing the old type of hinged firedoor usually meant that it stayed open for relatively long periods of time, while the fireboy filled his scoop ten or twelve times; after first yanking the chain with one hand, he had to reach for the baler, and then the door had to be closed by hand when the job was finished.

The whole procedure of stoking the fire is made much simpler by the modern, air-operated door, which is opened and closed by pressure of the foot on a pedal placed at the most convenient location. This mechanism works so rapidly that experienced tallowpots do not press the pedal until the scoop is just a few feet from the door.

Numerous types of automatic firedoors have been developed by railway supply houses, but efficiency and standardization have reduced the kinds in use today to a few popular types. Those opening vertically or horizontically, moving on guides, are gradually being headed for the scrap pile, with the "watermelon" type going the same way. Most roads equip their motive power today with either the Franklin "Butterfly," or the so-called Shoemaker door, product of the National Railway Devices Company; of these two, the Butterfly design is probably the most popular.

This type of door has two parts, which swing upward in a semi-circular direction. The frame is secured to the back boiler head by studs, at the top of which is an operating cylinder so arranged that it controls the opening and closing of the doors when air pressure is applied to the piston. It can also be operated by hand, at the roundhouse or when the supply of air is cut off for any reason. Adjustment can be made to lock the door in partially open position when the safety valve is blowing, or when it is necessary to dilute the firebox gases in areas where black smoke restrictions are in force.

TO ACTUATE the movement of the doors, air is drawn from the main reservoir supply and controlled by a foot pedal. When this is pressed down, a valve opens, allowing air to flow through ports to a pipe and up to the cylinder. This part is open at one end, simplifying its construction and eliminating rod packing. Air is admitted on the closed end, since motion is required in one direction only. When the air is released, the doors are so constructed and balanced as to close by gravity, drawing the piston back toward the closed head. The valve at the pedal then allows the air to escape to the atmosphere.

From the pedal valve, the air travels to

the cylinder; here the piston is connected by a short link to the right-hand door. As the upper ends of the doors have toothed sections which are always in mesh, the movement of the two is synchronized. While the opening is made quickly, the closing is slower, to prevent slamming as the two parts of the door meet; this reduction in speed is accomplished by having the air release through a restricted port.

When the door is opened by hand, force is applied to the right section which moves the left part as a gear. This is done by means of a lug, against which the hand lever contacts.

The designers of the Butterfly type of firedoor guarded against every possibility of its failure. Safety lugs have been cast at the bottom of the door, to take the strain in case of an explosion within the firebox that might otherwise snap the door off. On the inside is a liner, for protection against the intense heat. In order to keep the liners cool, holes are drilled to allow for circulation of air from the cab into the firebox, in such amounts as to do no damage.

The sections of the Shoemaker door have no gearing, but are connected by levers to the piston in the operating cylinders. With fulcrum pins on the left side, the upper part of the door is lifted and the other lowered; this arrangement does not take advantage of gravity in closing, air being needed for this operation also. Therefore two cylinders are required, one a little larger than the other. Like the Butterfly type, the Shoemaker door has all the safety features of guides in case of explosions, liners, and air-cooling holes. It can also be opened to any desired position, and violent slamming is eliminated during closing.

Maintenance on these types of doors is no problem, because they are designed with so little that can get out of order. In oil-burning locomotives, some of the fuel may be splashed up on the inner surfaces, and the intense heat will cause it to burn, leaving a gummy residue which must be cleaned off; otherwise, modern firedoors may be continued in service for months at a time, requiring little attention.

With the safe and sure operation of this up-to-date equipment, the heat-drenched cab in summer, the awkward, time-taking bother of hand-operated doors, the ever-present threat of danger from firebox failures—all are no more than memories for veteran firemen. And many of the young men now working on the big roads never even saw a chain door.

Photo by G. M. Best, 511 Sierra Drive, Beverly Hills, Calif.

REEFER TRAIN on the Southern Pacific's Tucson Division cuts across the desert powered by one of the road's big 2-10-2s

PETROLEUM, used as fuel as far back as 3200 B. C., has been the life blood of Southern Pacific locomotives since 1905, when the road began converting its coal burners due to ready availability of the liquid fuel. Hundreds of Espee tank cars with the letter "O" protecting them on the timetable are kept busy shuttling between oil country and wayside stations which supply engine tanks with from 800 to 6000 gallons per filling. The coal-slinging fireman who figures there's no trick to keeping an oil burner hot has another guess coming to him

By "SPARKY"

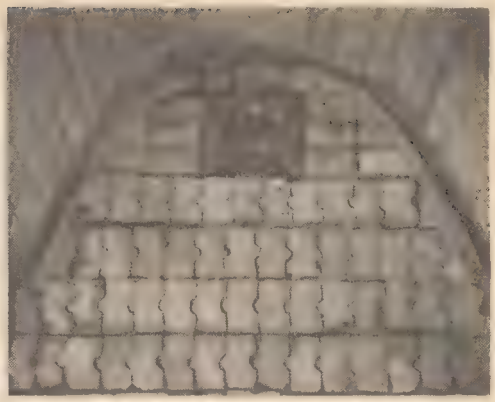
ON ARRIVAL at fueling station, tank cars are spotted with expansion domes near heaters. These steam coils, lowered through manhole, thin petroleum sufficiently to permit free flowing into ground sump

"BLACK GOLD", pouring into sump must next be pumped into overhead storage reservoirs holding from 12,000 gallons to 55,000 barrels

DELIVERY to the locomotive tank is through this telescope valve. Air space must be left, for oil expands

STEAM COILS in tank raise temperature of fuel to permit its free passage to engine burner and ready ignition

IN EMERGENCY, steam can be piped directly into tank. Danger is that oil in tank may boil over, a dirty mess and fire hazard, as witness this Consolidation wreathed in billowing smoke and flames



BEHIND firedoor with its safety latch to prevent flash-back into cab, is brick firebox whose sides and flue sheets must be protected from intense heat of burner

HEART of the system is this small burner. Placed in front end of flue sheet, it sprays oil at rear "flash" wall

SOOT residue would seal flues quickly if fireman did not throw sand into firebox now and then. Draft gives it scouring action

FIREMAN'S job is to supply steam which responds to these controls on 4300 Class

DENSITY of exhaust, at night, is shown by electric light placed ahead of stack

How Well Do You Know the Book?

PETER JOSSERAND, Western Pacific dispatcher and author of a recently published manual, Rights of Trains, presents another train order problem for students of the rulebook. His solution to this situation appears on page 78 of this issue.

ON THE DISTRICT extending from A to H eastward, No. 2, a passenger train, was due to leave A at 3:50 a.m. No. 77, a second class schedule, was due to arrive at A at 3:10 a.m.

The operator at C announced that First 77 was showing, since there was no telegraph office at B, and the dispatcher cleared them with the following order, which was addressed to westbound trains at C:

Cars on siding B.

First 77 will make A in good shape for No. 2, the DS noted. But he frowned as he observed the schedule column of Second 77. They had a load of munitions that the Army was raising hell about, and the general office had issued instructions that they be given the best possible movement. Second 77 was clearly short on time to make A for No. 2, but they ought to do it, the dispatcher decided: No. 2 won't get more than ten minutes at the most and they can make that up. With a glance out of the window at the heavy weather—wind and rain turning to snow, he issued the following order:

Second 77 Eng 757 has right over No. 2 C to A.

When Second 77 passed C right on his figure, the detainer grinned as he told A that he could clear No. 2.

As Second 77 rounded the curve approaching B, the siding was to the left of the main. Through the thickening snow, the fireman peered at the siding, then called across the engine cab:

"Looks like a train out there."

"Somebody tied up on the law, I reckon," answered the engineer. "No markers showing, was there?"

"Nope, not a sign of a light, but it looks like they're still up."

Pulling past the west end of the siding, the engineer thought he saw a flash of light—green—from the fireman's side. He yanked aside the storm curtain and looked back, but there was nothing to be seen in the swirling snow.

"Didn't stick 'em but five minutes," the hogger remarked as he brought Second 77 to a stop at A.

When Second 77 cleared the east switch, No. 2's Engineer Brown turned his headlight on full and his fireman gave the bell-cord a yank, both looking back for a highball. Instead, Conductor Abrams strode up to the engine.

"Let's go," said Brown. "We were restricted for Second 77 and they're in—engine 757."

"That couldn't have been Second 77," Abrams replied. "Until First 77 went ahead of them displaying green signals, there wasn't any authority for them to run as Second 77. And First 77 hasn't arrived. We've got to do what the order says—wait for Second 77. I'll go down and put it up to the DS. Maybe he'll annul the order. Looks to me like the second section ran around the first. But this train that just came in didn't have signals, so they didn't exchange signals and orders. Anyway, that's the dispatcher's baby. We'll see what he says."

"Abrams must be mistaken," the DS told the op, after hearing the story. "First 77 must be in the yard—they left C ahead of the second section, and I didn't change their original order. If Second 77 passed the First at B, there's nothing I can do about it. I can't take down the order until it's fulfilled, and if First 77 isn't at A, it's a cinch that Second 77 can't be there, so the order is still good. Get hold of Conductor Phillips on the train that just arrived and find out what's going on."

Just then Phillips entered the office, to mark up on the register.

"What train did you bring in here?"

"Second 77, engine 757, no signals," Phillips grinned. "What are you waiting for—we're in the clear."

"Where's First 77?" asked No. 2's conductor.

Phillips said they were in, sure, but they weren't on the register, and Night Yardmaster Handley, who came in at that moment, said he knew they hadn't arrived.

"Well, did you pass them at B?" everybody asked Phillips.

"Not that I know of," the skipper said. "I didn't go outside the caboose—busy with my wheel report—and the windows were plastered with snow. Besides, we had an order that there were cars on the siding at B."

"Hell," snorted Handley, "only two, and they were way up on the west end. First 77 could have been in there."

Phillips produced the flimsies to show that he was Second 77, and his right-of-track order.

"Can't be," Abrams maintained. "First 77 carried the only authority you had to run as second section, and if you ran by them at B, you came in here on your nerve. You can't be Second 77—we're restricted here for them—the DS won't annul the order—and I won't go until it *is* annulled!"

If you had been in the trainmaster's shoes, what would you have done to get No. 2 moving? And who would you hold responsible for such a predicament? Was the dispatcher's second order wrong?

Photo by Donald W. Furler, Glen Rock, N. J.

ERIE FREIGHT crosses the Moodna Viaduct, east of Port Jervis, N. Y., with No. 3356, one of the road's big Class S-3 Berkshires, up ahead

The Information Booth

EACH month the Lantern Department includes, in addition to a technical article on some ramification of railroading, answers to rail questions of general interest, submitted by our readers. We do not send replies by mail.

1

WHAT are the advantages of electric traction in open-pit copper mining? With this type of power isn't it necessary to move the contact system as well as track, as mining operations progress?

In strip mining, where the ore is taken from a series of terraces or benches, it is true that the railroad tracks must be moved laterally as one bank is dug away and another opened. But this seeming disadvantage is compensated for by the fact that electrified transportation eliminates hauling fuel as required by steam traction; and it is also true that adequate supplies of good water are often difficult to obtain in copper-mining areas. In general, it has been found that there is less track wear with electrification, and no burning of crossties, once a heavy expense in large mines. Elimination of smoke increases good visibility and thereby helps pit operation.

2

WHERE and when were the locomotives named Punch and Judy in operation?

According to oldtimers who worked the Colorado narrow-gage roads in the early days of railroads through the Rockies, the Colorado & Southern had among its first engines for passenger service two 0-4-0s, called *Punch* and *Judy*. These little locomotives pulled the first passenger trains, consisting of two cars, into Georgetown and Central City, Colo. Two other engines, in service between Denver and Golden at the same time, were eight wheelers.

3

EXPLAIN how the Pennsylvania's new train telephone system operates. This installation has been made on the Belvidere Branch of the New York Division, a fifty-mile line between Trenton and Phillipsburg, N. J.

The system for intertrain communication and between trains and way stations now being given trials on the PRR's Belvidere Branch combines features of radio and wire telephony; constant contact with moving vehicles is made possible, with the transmission paths at the same time restricted to railroad property.

Telephone equipment in both engine cab and caboose is kept open during the entire time that the train is passing between Trenton and Phillipsburg; the central point on this line, Frenchtown, handles the communications from engineer and conductor. When the telephone is to be used, a calling signal is given via a push button on the control panel; this is relayed to loud speakers of receiving sets in the station at Frenchtown and on locomotives and cabooses within the operation radius. The person calling then gives the name of his station or number of locomotive or train, and tells whether engine cab or caboose is being called. When communication is established, the conversation is transmitted at the same time through the loud speakers of other units within receiving distances, anyone of which can break in by calling the signal, if that should be necessary.

The range of communication between locomotive and caboose of one train with those of another is about four miles; communication regardless of distance can always be made through the operator at the way station, Frenchtown, who can make contact with trains anywhere in the territory covered by the system. To date, ten locomotives and ten cabooses have been equipped, and an additional block station will soon be in service.

Photo by C. W. Witbeck, Box 2501, West Jackson, Miss.

MAKING FORTY past Four Mile Run, Va., on the Richmond, Fredericksburg & Potomac's Washington-Richmond route, No. 602 picks up speed with 16 cars of the Atlantic Coast Line's northbound ***Tamiami Champion.*** This engine is one of the second series of the RF&P's Northern types, outshopped in 1938: a third group was put into service last year (featured as the ***Locomotive of the Month,*** June, 1943)

4

HOW LARGE an area can be covered with one installation of centralized traffic control?

On the Norfolk & Western's Shenandoah Valley line, where the largest C.T.C. machine in use anywhere in the United States is located, at Roanoke, Va., the most distant switch controlled is 166 miles away from Roanoke. This C.T.C. machine is 15 feet long, in the form of a horseshoe, with control over 39 power-operated switches and 143 signals.

5

DOES the New York Central operate any Northern type locomotives?

At present, no 4-8-4s are in service on the New York Central. In 1929 an experimental, multiple pressure engine of this type was outshopped by Alco for

NYC and numbered 800 but this unit was scrapped several years later. The road, however, is planning to investigate the performance of this type of power under current conditions, since officials just recently placed an order for one experimental steam locomotive of the 4-8-4 wheel arrangement, to be built by Alco.

NY6 ARR 425PM TRACK 7 ENG 3056 8/11/43

1 6236 L 12 MEAT 45
2 8689 L 32 FLR 73
3 140507 L 32 " 75
4 35916 L 18 WINE 50
5 9801 L 28 CALC 85 99801
6 99810 L 28 " 82
7 21857 L 34 OIL 55
8 62662 L 34 " 55
9 4295 L 34 " 55
10 39449 L 35 HF 30
11 30107 L 23 HIDES 40
12 8112 L 41 OIL 50
13 14733 L 41 " 50
14 102996 L 48 BTLES ,NS
15 48365 L 28 ALCO 48
16 75421 L 48 PLANE PTS 30
17 302789 L 39 IRON 52
18 296066 L 39 " 53
19 9084 L 18 FLR 60
20 6532 L 45 AMMU 67
21 275296 L 45 " 81
22 20721 L 16 BEER 46
23 880842 L 28 ALUN 81
24 880851 L 28 " 81
25 14045 L 18 GLSWE 38
26 503587 L 18 LIQ 45
27 130424 L 18 " NS
28 20979 L 18 " 45
29 52012 L 18 " 45
30 616379 L 46 STEEL NS
31 703516 L 45 CLOTHG 39

COMPLETED AT 515PMAH

6

EXPLAIN the classification of information that appears on a switch list as used in one of the large yards.

Reading left to right on a hump list (reproduced below) from the New York Central's DeWitt Yard, East Syracuse, N. Y., the six columns give the following information: 1) the location of the car in the train; 2) number of the car; 3) loaded or empty, indicated by L or E; 4) track to which car should be switched in the classification yard; 5) contents of the car; 6) gross weight of car and contents (in tons). At the head of the list appears train number, time of arrival, track, engine number, and date. "Completed at 5:15 p.m., A.H." is the yard clerk's final okay.

7

HOW is density of freight traffic estimated, and on this basis what is the busiest railroad in the country today?

Freight traffic is measured in ton miles, a combination of the factors of weight hauled and distance traveled. One ton-mile represents the transportation of one ton of freight for the distance of one mile. Density of traffic, estimated over a 24-hour period, is the number of ton miles per mile of road. On this basis, the Norfolk & Western, chief carrier for West Virginia soft coal regions, has the greatest density of traffic among Class I roads, with a record of 26,246 ton miles per mile of road per day in 1943.

8

WHAT is the maximum diameter for leading wheels?

Heights may vary, but the 42-inch leading wheels on the Santa Fe's 3776-3785 Class of 4-8-4s are the largest in diameter on a locomotive today.

COMING NEXT MONTH: Story of a Delta carrier, the Columbus & Greenville

THIS NEW HAVEN engine, tried out by Pennsy in 1933, served as pattern for the streamlined GG-1

Crews of First and Second 77 at Fault

HERE is Peter Josserand's solution to train order problem printed on page 73.

The dispatcher did, to some extent, use poor judgment in issuing a right-of-track order over No. 2 to Second 77 when First 77 had no such authority. Of course, he could not foresee that First 77 would develop a dangerously hot journal, which delayed them so that they had to pull into the siding at B in order to clear No. 2, while they worked on the hotbox. Neither was the DS responsible for the wind blowing the markers out on First 77; nor for the fact that Second 77 came around the curve and caught First 77's crew unprepared to flag them; nor for the fact that the cars on siding ahead of First 77's engine, and the blinding snowstorm, hid the classification lights, which the engineer on the second section looked back to see.

It was the duty of the crew on First 77 to make sure that Second 77 did not pass them, inasmuch as they were carrying the only authority which this section had to occupy the main track as a train. On the other hand, it was the duty of Second 77's crew to know positively that those signals had preceded them. If they were in doubt, they should have stopped at B to make sure that First 77 was not there.

The rules provide that "a section may pass and run ahead of another section of the same schedule, first exchanging train orders, signals, and numbers with the section to be passed." It is, of course, the responsibility of both crews to see that such exchange is properly made before one passes the other.

There is no provision in the rules for untangling such a situation, except the flagging rule. The flag supersedes all other forms of superiority. Trainmaster Johnson could do nothing except direct No. 2 to follow a flag down to B. If the crew on First 77 could definitely establish the fact that Second 77 had arrived at B, No. 2 would be released. Otherwise, they would have to continue following a flagman to C.

Photo from Henry H. Schodde, 155 S. Market St., East Palestine, Ohio

ONE OF the American types assigned to service on the Lines West, Pennsy's No. 7606 was built at the Altoona shops in 1888. All of the road's 4-4-0s were originally Class 0, but were subdivided under the new Class D when Pennsylvania motive power was redesignated; No. 7606 was a D-8-a

FOR PASSENGER SERVICE over some of the most mountainous country in the East, Norfolk & Western motive power officials have designed an all-purpose, heavy-duty locomotive emphasizing power rather than high speed, though both of these qualifications are well met by the six units comprising the new Class J-1. These 4-8-4s, numbered 605-610, have recently left the road's Roanoke, Va., shops, and are in use on all parts of the system where heavy passenger traffic must be handled. Regular assignments are the system's crack trains, *Cavalier* and *Pocahontas*.

The new locomotives are wartime versions of the Class J machine, the first 4-8-4 to be built by the N&W and outshopped in 1941. Numbers 600-604 were streamlined, but the handsome black-and-red shrouding is missing from the new units. Another change forced by current conditions is the return of high-carbon-content steel for reciprocating parts, since the lighter alloys are not available. The I-section rods on the J-1 are probably the broadest ever applied to an engine, and give it the appearance of tremendous power.

Following the specifications of Class J, these new units have a trac-

Locomotive of the Month:

Norfolk & Western J-1

tive effort of 73,300 pounds, one of the highest 4-8-4 ratings in the country. To date, booster engines have not been applied, but if they are added later, as was done in the case of one of the first group, total tractive effort will be 85,800. Driving wheels have a diameter of seventy inches, comparatively low for this type of engine, but this figure, accounting partly for the T.E. rating, indicates no compromise with speed, however. Drivers are cross-balanced for additional speed, which is top-rated at 90 miles per hour.

Over the Alleghanies, where gradients range up to 2.1 percent, the J-1s have been running on moderate schedules between Roanoke and Cincinnati, unassisted and without engine changes. In these rugged 4-8-4s, Norfolk & Western operating men expect to have adequate power for fast passenger service.

Numbers	605-610
Cylinders	27x32
Drivers	70
Pressure	275
Weight on drivers	288,000
Total engine weight	494,000*
Tractive effort	73,300
Tender capacity	22,000 gals 26 tons

**Class J; slightly less for J-1.*

True Tales of the Rails

Actual Happenings

Told by Eye-Witnesses

Saved by a Hunch

SNOW, deep swirling snow, covers the roadbed of our London-St. Thomas Division, jointly operated by the Canadian National and the Wabash, on January 19th, 1943. That day and those following are long to be remembered. The blizzard will last until the 22nd, piling huge drifts clear across the Canadian National's Eastern Lines to Halifax, Nova Scotia, bringing all branch traffic to a standstill and isolating many communities. Trancontinental trains are hours behind schedule. Heavy-laden red-ball freights hauling war supplies slowly battle their way through the blinding storm.

In the snug comfort of my home at 924 Chatham Street, East, Windsor, Ontario, I am waiting for a call which I hope will not come. With the wind howling outside, I want to lay off a trip rather than climb

By
WILLIAM
J. PARRY
CNR Engineer

into the cab and buck that blizzard for 110 miles.

But at one o'clock noon on the 19th my telephone does ring, and I answer it. Over the wire comes the voice of Wesley Musson, our Canadian National crew dispatcher, calling me for First 476, on which I am holding a temporary vacancy, for 3:45 p.m. Reluctantly I accept, mindful of the fact that men in the armed forces cannot lay off when the going gets tough.

"What engine do I get," I ask Wesley.

"Engine 3490, Fireman Fallow," he replies.

This news puts me in a more cheerful frame of mind. Archie Fallow is my regular fireman, a good fellow to have around in emergencies. And the 3490 is a Mikado, stoker-fired and counterbalanced for sixty miles an hour. I fired this free-steaming Mike myself during the depression years—for Albert Stanley, a capable runner—so I know what she can do with a train under adverse conditions.

That day I have a hunch to visit the

watch inspector. All employes who are required to carry standard timepieces must, under pain of discipline, present them twice a month to a certified inspector for comparison. Mine is running okay. And that okay on my watch card will play an important role in the events which follow.

At three o'clock I report for duty, forty-five minutes before train departure. We are allowed thirty minutes preparatory time and fifteen minutes to couple the engine onto the train. Taking charge of a modern machine such as the 3490, worth many thousands of dollars, does not mean simply climbing into the cab and taking a ride, as some rail chief stated rashly at a wage hearing not long ago. There are numerous—too numerous to be detailed here—important duties to be performed by the crew before a locomotive is ready to pull her train. And especially in these days of motive-power shortage and pooled engines, the men must be on their toes. Once an engineer leaves the shop track, he is held responsible for any defects that may occur, regardless of who causes them.

Before going on with the story, let's see how the CNR-Wabash yard at Windsor is laid out. The place is not very much as railway yards go. It is merely a pocket edition. Huddled beside the Detroit River, it offers no room for expansion to facilitate switching. You wonder how yard forces manage to handle the great shipments that pass through this busy terminal every twenty-four hours. Operated jointly by two railways, Windsor is the dead end of the St. Thomas Division. There are only seven eastbound tracks in the classification yard, each having its own stop block. In the "good old days" yardmen were known to shove cabooses over the stop blocks; but now that rolling stock is at a premium, stop blocks are used for the proper purpose.

Windsor station, classification yard, car shops and roundhouse are built along the river bank below street level. Across the water you can see Detroit—but not during a blizzard. Windsor storage tracks, opposite the classification yard, follow the river's edge. Tracks in the lower end of the yard terminate at two Wabash slip docks. Three car-ferries, each of them four-tracked—the *Windsor,* the *Manitowoc* and the *Detroit*—handle Wabash freight to and from Detroit. The Canadian National uses only one slip dock and one car-ferry, the *Lansdowne,* to take care of its freight and passengers at that point. The Michigan Central, Canadian Division of the New York Central, hauls freight and passenger trains through a tunnel under the Detroit River, which gives the old Vanderbilt road quite an advantage in competing for traffic over the Canadian cutoff to Buffalo.

ARRIVING at the roundhouse, I find Number 3490 on the shop track, with a foot of snow around her drivers. Engines are usually parked outside long before they are ordered, because the roundhouse is far too small, although some time ago several stalls were lengthened to house the CNR 6100, 6200 and 6400 classes, also the Wabash 2200 class, and a longer turntable was installed. Despite these improvements, servicing engines is still a headache for the shop staff.

After wading through hillocks of snow I inspect our Mike and discover her dynamo drain-pipe is frozen. So I climb up on the boiler, thaw out the pipe and start the dynamo running. We need lights, the storm being so intense that switching operations are conducted with the aid of lighted fuses. Promptly at 3:45 my head brakeman, Al Bart, shows up to herd the 3490 down to her train. Bart places his lantern in the cab, telling me to "stay put" until the eastbound yard goat is through with Wabash Number 98. I close the cab windows and wait for the signal to back up.

It is 4:03 p.m. when I get that back-up signal. The Wabash train is third class and therefore has priority over First 476, which runs as an extra. The Wabash engine backs onto her timecard train. I follow with the 3490 into track five and couple to the extra.

Car inspectors look my train over, then call for a standing test of train brakes. I set 'em up and wait for the signal to release. Presently the car tonk reappears with the information that all brakes are working, that I have twenty cars and my conductor will be ready as soon as he gets the bills.

The light train will give us a break as far as Chatham, forty-six miles east, where we will fill out to full tonnage if the yardmaster has it. A few minutes later Conductor Joe Ferguson appears at the gangway with the orders. These are read aloud to all present, as follows:

Order No. 253, St. Thomas, Jan. 19, 1943. Eng. 3490 run extra Windsor to Glencoe ahead of No. 98 East eng. 2455 and No. 96 eng. unknown from Windsor until overtaken.

Order No. 250. Second 82 due to leave Windsor Tuesday Jan. 19th is annulled Windsor to St. Thomas.

Order No. 976. Passenger trains do not exceed fifty (50) miles per hour and freight trains forty (40) miles an hour between mileage seventy-four (74) and sixty-six (66).

Order No. 990. Account shortage of water at Glencoe water to be taken in case of emergency only.

Having read the orders and compared watches, Joe gives the high sign and I whistle off. The switch tender's lantern says, "Take 'em away!" Archie Fallow starts the stoker and we head into a wild storm as we pull out of the yards.

Chugging along the main line, I keep the 3490 within yard-limit speed, prepared to stop within seeing distance, which today is hardly any distance at all. There is no sign of the Wabash train's tail lights when we pass the Walker Distillery, the giant plants of the Ford Motor Company and the interchange tracks of the Essex Terminal Railway. The 3490 begins to accelerate on the slightly falling grade. We are now rolling past the wye and Chrysler spur track. The yard-limit board, four miles east of Windsor station, swims into view and slips past the cab window.

Our Mike is not fitted with smoke-lifters; and the wind-driven snow, swirling over the smokebox, blots out the view of fireman and brakeman. Snow sticks to the cab windows—we are running blind! I open the defroster valve, blowing a jet of air down the glass. No luck! If the defroster were located outside the window it would do some good, but it happens to be inside. Pulling my storm cap down over neck and ears, I shove my head out of the cab—and take it.

WORKING at a thirty-three per cent cutoff and a light throttle, the 3490 is playing with her light load. The train order signal at Tecumseh, eight miles from Windsor, rises out of the murk. The light is green. I call the clear indication to Archie and Al, and they respond:

"Clear board!"

With the whistle shrilling its warning notes we roll across the first highway crossing, through the depot, and over the second crossing. A green signal light indicates that the Wabash train is ten minutes ahead of us or at least has arrived at Belle River, the next open telegraph station.

But Tecumseh's clear board does not tell the whole story. In the darkness of snow squalls which smother the 3490 from time to time I sense a secret, perhaps a mystery holding life and death in its veil. What it is I do not know. And no block signals warn me that I am overtaking Wabash Number 98.

The train ahead is one responsibility, another will be leaving Windsor at five o'clock. Number 16, the *Ontario Limited*, hauled by a new 6200 class engine (shown in the May '43 issue of *Railroad Magazine* as the Locomotive of the Month) will soon be on my tail. Belle River, seventeen miles east of Windsor, is the logical point to clear the Limited. I have time to go on to Stoney Point, the next station, and clear her by ten minutes, but there is no siding at the Point, which means backing over on the westbound track and sending out flagmen in both directions—and the weather is brutal. So I decide to head in

at Belle River and give the Limited a wide berth.

Unfortunately, the engineer of that train, Billy Winter, is having a tough time with his hand-fired Mikado, and Billy gets the same idea that I have.

Approaching Belle River, I watch the roadbed intently for the red glow of a fusee. The 3490 swings into the wide left-hand curve, but there is no fusee, torpedoes or flagman. Fireman Fallow and Brakeman Bart lean from the cab windows, straining their eyes for the gleam of a train-order signal, located opposite the station and hidden from my view by the curve. But their tense faces tell me that nothing can be seen. Only steam, smoke and blinding snow.

Something warns me to slacken speed. The yellow board, "station one mile," springs into the headlight's beam. I apply brakes, reducing speed to about twenty-five miles an hour. Still no flagman appears, and I kick the brake-shoes free.

Quite suddenly then, the flagman comes tumbling out of the storm. Quicker than a flash the brake-valve handle moves to emergency position. The throttle snaps shut; sand is spurting under the drivers. Instinctively, I haul down the whistle chain. The long wailing note bursts forth, ordering those in the caboose to get out. I figure time in split seconds. The brakes are not holding as they should. The auxiliaries have not had time to recharge, following the running release. If the train had all AB's, we might make it, but only one or two cars have such equipment.

Those two red tail lights grow larger until they resemble flaming beacons. There isn't time for Archie and Al to unload. Not now! The canvas storm curtains, securely tied, bar escape through the gangways. It would be suicide to jump from the cab windows to the frozen westbound track. Three men in the cab are trapped.

WITH a crash of splintering timbers, the 3490 ploughs into the caboose. The engine quivers like a stricken deer, lurches forward for a few revolutions of her drivers, then stops with her front end buried in the debris.

Slowly, I climb down the gangway in a dazed condition. No one is hurt—just a shaking up, that is all. The Wabash train took water and started pulling in the siding, which fortunately lessened the impact. Apart from a broken headlight and classification lamps and bent running boards, the Mike is not much damaged.

The air compressor is still working, but the air gage shows no pressure. Obviously an air pipe is broken. I am trying to locate the leak when Conductor Cameron comes up from the other train to ask if I can back my engine before his caboose catches fire.

"Sure I will," I reply, "but first I have to repair a broken air pipe."

Before I can find the break that caboose bursts into flame. The boxcar next to it has a rear pair of trucks derailed, so Cameron pulls the pin ahead of the derailed car, and Number 98 eases into the siding. Fanned by a high wind, the caboose burns fiercely. By this time I have found the air leak, just above the pilot.

I must think fast and work faster if I expect to save the engine. Crawling between the pilot and the burning caboose, I work on the broken pipe. I have just completed repairs when the blaze reaches the smokebox. Quick strokes of the compressor soon restore the air pressure. I release the train brakes and back the 3490 away from danger. A few minutes later Billy Winter backs his engine almost to the wreck. He picks me up and I ride down to the station to report to the St. Thomas dispatcher.

DS wants to know if I can take my train through to London, and when I tell him "No" he puts out orders for me to back the train to Tecumseh, store the cars on a siding and return to Windsor with the engine. So this is what I do. Backing slowly, we pick up our rear brakeman, Bob Burke, who went around the curve to flag Number 16 and now has both ears frozen. And is Bob glad to climb aboard!

The operator at Tecumseh held the Limited. The varnished train now backs

to Windsor and is rerouted over the Canadian Pacific to London. Meanwhile, the derailed car, loaded with insul board, is ignited by the flaming caboose and burns for six hours.

Upon my arrival at Windsor, I find that another engine and crew have been ordered to take First 476 to London—which, incidentally, doesn't hurt my feelings a bit. So I book off duty. And as I walk homeward along Chatham Street through the blinding snow, I realize that the God of Railroaders must have been leaning very close to us at the time of speed reduction on the curve at Belle River. Because of a hunch, I am alive to write this tale and to pull more Canadian National trains.

Car Knocker

By MILTON A. MOHR

THERE isn't much glamor in the trade of car knocker; but if you like being around a railroad, as I do, you might find it an interesting occupation.

This game is easier today than it was back in 1906, when I broke into railroading. At that time freight cars usually had wooden underframes, end sills and draft timbers. Most truck bolsters were of wood, and the outside brakebeam had not yet been outlawed. Truss rods, running lengthwise underneath the car, stiffened it against the rough treatment that a freight car got, and still gets.

We had to be alert not only in spotting worn or broken flanges and brakeshoes but also in keeping a sharp lookout for cracked sills, defective draft bolts, and especially defective truss rods or brakebeams. If either of the latter broke loose under a moving car it was likely to drag along until it tore out an interlocking plant or perhaps caught in a switch point and ditched the train.

On the other hand, we did not give the Safety Appliance Law very strict observance. Any yardmaster would have had a fit if he had been told to throw a load out of a train merely because it had a broken coupling lever, a bent or broken stirrup, or a couple of rungs missing from a side ladder.

The freight car of today is built like a battleship and will take a beating that would have reduced old-time equipment to splinters. One of the most common mishaps in switching at that time was the shifting of loads when cars came together too hard. A lot of Western boxcars on the rails in 1906 didn't seem to be much more substantial than a cracker-box. They were probably okay for hauling grain on the home road, but when loaded with heavy machinery at Eastern factories they had to be switched with care, or the load would come right out through the end of the car.

I started as a clerk in the Baltimore & Ohio shops at Benning, D. C., but soon transferred to the car repair gang, as I figured that pay and promotion there would be better. The usual procedure was to start a greenhorn at repairing trucks. Cars were jacked up, trestles were placed under the bodies, and the trucks run out from under. Thus the repairmen could replace worn center plates, bolsters, brakebeams or whatnot, while the carpenters were busy on the car body. From the truck-repair gang you graduated into a job as carpenter or went to the "rip track" as a general repairman. It was from the latter gang that inspectors were usually recruited in those days.

I went through my apprenticeship rapidly. At that stage I absorbed my first taste of "Jersey lightning." I was going home one evening when I noticed that the old-fashioned tin dinner pail of one of my mates was slopping over and spilling what looked like water. When his

attention was called to it, he looked around, and edged over to me and queried in a hoarse whisper:

"Wanna drink?"

Cautiously he uncorked the bucket, and we each imbibed a hearty draft.

"It's applejack," he explained. "Best drink in the world."

We had another. Between us we emptied the bucket, and when I finally reached home I was practically unconscious. Boy, did that stuff pack a wallop! Later I found out the source of this beverage. The boys on the rip track had discovered the car of "jack," had bored through the floor and into a barrel, and all hands proceeded to fill their buckets and celebrate.

ABOUT August first, 1906, I was transferred to the newly opened Potomac yard, as car inspector. There I got a fine introduction to my new job. It rained almost every day that month and nearly every employe in the yard came down with typhoid or malaria. I had a touch of the latter myself.

I didn't know much about my new duties, but I was trying to learn. And I learned at least one valuable lesson during the handling of that railroader's headache, a circus. When the big top is getting ready to leave, the yard is usually cluttered up with officials and, as a consequence, many employes are jittery. I was standing around, trying to look busy, when a large and important-looking gent stepped up to me with a friendly smile.

"Are you a car inspector?" he asked.

"Sure," I answered proudly.

"Then I know you'll do me a little favor," he said. "Take a look at the poles I had to load on top of that car. They are securely lashed and they're bound to ride all right. But you needn't say anything about them."

With a hearty handshake he departed, leaving me to gaze with astonishment at a neatly folded ten-dollar bill that had somehow stuck to my palm. I didn't know what it was all about, but I soon discovered.

After the cars had been shoved over the hump into the classification yard, my boss spotted those poles and raised merry hell. He quoted loading rules to the outraged circus folks, and made them drag the poles off and load them on another car. The manager of the show confided that a car inspector had passed the load and there had been a cash payment therefor.

"Where is that car inspector?" my boss howled. "Point him out and I'll fire him quicker than you can say scat!"

At which point I absented myself from the scene in a big way. And I stayed out of sight until that circus had been gone for at least an hour.

I don't know how the boss learned I was the culprit, but he did. Instead of firing me, he gave me the lecture of my life. And I learned a lesson that probably saved my neck at a later date.

One day I was detailed to go over to Alexandria, Va., to supervise the loading of some pontoons that were to be shipped north. These were a kind of boat, used to support a pipe line through which a suction dredge discharged sand. The foreman instructed me to be extra careful and gave me exact measurements of the maximum load that would clear the Washington & Ohio tunnel through which the cars were routed.

When I arrived on the scene I found the contractor's foreman loading six pontoons on each flatcar. I measured the first load and told him it would not clear, and suggested another way of loading that would give a good safe clearance, but whereby only five pontoons could be placed on a car.

"That's the railroad for you!" he growled. "Trying to make us use more cars. I'll phone for my boss."

"Yeah," I retorted, "and I'll call mine."

We glared at one another until the contractor and the master mechanic had both arrived. My boss backed me up by citing dimensions of the W&O tunnel. He warned the contractor that unless the cars were loaded properly they would not be moved

SQUATTING position of car inspectors gives us our nickname—"toads"

By this time it was too late to do any more loading that day, so we all went home. Next morning I was on the job bright and early—and so was the contractor. Much to my surprise, he was very affable. As the morning wore away he became positively chummy. I should have been suspicious, but I wasn't. The foreman didn't seem to be pushing his gang very hard; in fact, they hadn't even loaded one car by now. Even after lunch they worked no faster. I began to think I'd be on the job two or three days. The contractor seemed to be as bored as I was.

"Let's go over to Washington for a matinee," he suggested. "I haven't seen a good show in a coon's age."

The invitation was declined on financial grounds. I rarely carried much money in my working clothes.

"Nonsense!" said he. "The trip is on me, of course. What's the price of a show ticket between friends?"

Thereupon I peeled off my overalls and away we went. After the show we had a couple of drinks. My friend took a gander at his watch and opined that we might as well kill the rest of the afternoon by having a few more drinks and a swell dinner. I went home in a pleasant glow.

The following morning, even before I could leave the house, that glow disappeared in a cloud of gloom. My boss phoned to ask what the hell I meant by releasing improperly loaded cars, and told me to report at his office immediately.

I didn't know what had happened, so I resolved to tell the exact truth about the events of the preceding day. This frankness probably saved my job. If I had been caught in an attempt to cover up, I probably would have been fired. As it was, I endured quite a tongue-lashing.

As soon as the contractor and I had departed for Washington, the loading gang put on a burst of speed. The pontoons were loaded in jig time, six to a car instead of five; and the yardmaster was notified that the shipment was ready to go. The Y.M., knowing that an inspector had been assigned to supervise the loading, ordered the cars picked up.

"You go over to Alexandria," my boss barked, "and tell this wise guy that his pontoons, what's left of 'em, are scattered all the way through the tunnel. And if he thinks he's going to collect a dime from this company, he's crazy."

SHORTLY after that incident, I grew restless and quit the job. First I went home to New York to visit my folks, then I hired out to the Pennsy at Greenville terminal in Jersey City, N. J. I should have stayed at Benning, where I had built up a little seniority, but you know how young fellows are! It wasn't long before the national panic of 1907 caused a lot of men to be laid off, and I was one of them.

But luck was with me. Even in a tough year, I managed to land a job with the Washington Terminal. My shop experience was valuable, so I drew a very nice assignment—that of inspecting and repairing doors and windows of incoming coaches and searching the cars before they were whisked away to the coach yard.

A surprising amount of assorted property, valuable and otherwise, is left by flustered or absent-minded passengers in the coaches at any big terminal station. All such articles are supposed to be turned in at the stationmaster's office and held for ninety days. If not claimed in that time, they became the property of the finder.

On one occasion I found an elegant parasol with a gold handle a foot long. I figured that my wife would receive a very nice present if it wasn't claimed. So I watched the stationmaster's office like a hawk, and I spotted a clerk taking a Sunday stroll with a lady carrying a gold-handled parasol that looked exactly like the one I had turned in. Inquiring at the office, I was told that the object had been claimed, and was shown the receipt. I have always believed the clerk swiped that parasol for his girl friend and signed the receipt himself.

The next time I picked up a good-looking sunshade, this time with a silver handle, I hung onto it. I hobbled out of the

depot with that umbrella hidden in a leg of my pants, and fellow workers were solicitous about my supposed injury. My wife was highly pleased, but there was no luck in the darned thing. Not long afterward, we went on an excursion, and the parasol got caught in the gate of a car. All we saved was the silver handle.

Going through a newly arrived train one night, I found a fine leather wallet on top of the water cooler, which was set into the wall of the wash room. When I opened the case I was almost scared at the large quantity of folded money it contained, and I wondered why the owner had planted this sum in such an obvious place and then forgot it.

Finishing the train as rapidly as possible, I stepped off onto the platform and saw the stationmaster approaching. He was accompanied by a prosperous-looking gent who seemed slightly worried. The stranger gave a minute description of the wallet, which he said contained six thousand dollars. When I handed the leather over, he took a hurried look inside, stowed it away without counting the money, and made for the exit. A few steps away, he turned and asked:

"Do you smoke, young man?"

Without waiting for an answer he pressed a cigar into my hand and was away again with the stationmaster in pursuit. The last thing I heard was the voice of the latter functionary telling the passenger off as they hurried up the platform.

Looking back across the years, I can only conclude that the wallet was very "hot" indeed. The passenger evidently had got rid of it and walked out the car to see if John Law was waiting for him at the gate. Finding the coast clear, he hurried back. The stationmaster should have called a cop and made our suspicious-looking customer establish his identity.

On another occasion I picked up an old-fashioned net bag that contained an apple, an orange and one dollar. It was claimed by a dear old lady, who wanted to give me the fruit as a reward. I politely refused, and thought of the prosperous gent with his six grand.

Passengers are, of course, under no obligation to reward the finder of valuable property that has been lost through their own carelessness, but most of them do. I remember finding a topcoat of the old "Chuck Connors" type—the kind with several rows of stitching around the bottom that seems to be trying for a comeback today—and turned it in at the stationmaster's office as a matter of routine.

Shortly afterward I was called back to the office and was informed that the owner had phoned from the Willard Hotel, described the garment, and requested that the finder deliver it in person. The boss gave me two hours off for the purpose, so I washed up and was on my way. Since the Willard was a swanky joint, I was awed by the unaccustomed splendor; but the owner of the coat, when I was shown to his room, immediately put me at ease by seating me in a comfortable chair and mixing a generous glass of Scotch and soda.

Then he hung the coat in a closet, after giving the seams of the wide padded shoulders a most solicitous examination. Apparently satisfied, he mixed another drink and started a conversation. I forgot about the time until a glance at my watch made me realize that I was about due on the job.

"Nonsense!" my host exclaimed. "I'll talk to your boss on the phone. You've done me a favor and you're entitled to a reward."

During his phone conversation with my boss, he mentioned being a friend of somebody. I didn't catch the name, but it seemed to mean something, as I was told that I could take the rest of the night off. We dined on fried chicken, with fancy trimmings, at a famous restaurant; saw a good show, and wound up the evening in a night club.

By the time they closed the joint, I was in a mellow mood and magnanimously refused any reward for returning the coat. There were two or three genial gentlemen wavering before my eyes, if you get what I mean, but I played safe and addressed all remarks to the one in

the middle. Then I rode home gloriously in a hansom cab—the kind pulled by one horse with the driver sitting on a little perch behind the rear edge of the roof. It wasn't until two or three days later that I discovered a totally unexpected ten-spot in the breast pocket of my coat. I never saw my host again, and the stationmaster did not mention the incident.

NOT ALL passengers are polite when they have lost some valuable. I once found an irate individual slamming the seats back, fuming and cursing under his breath. Evidently he was hunting for something he had dropped on the floor.

I offered to help if he would tell me what had been lost, but he said it was none of my damned business. He added that all railroad men were crooks anyhow, in his estimation, so I let him do his own searching. He sputtered and fussed until the switch engine was about to drag the train away to the coach yard. Then he had to give up and disembark, to avoid a long walk in the darkness. After he had gone, it didn't take me two minutes to find the lost article—a shiny ten-dollar gold-piece. I stuck the coin in my pocket and, since the passenger did not report his loss at the stationmaster's office, I kept it.

One of my jobs was to go through the diners and see that no silverware had been left lying around loose. All such I was required to turn in to the stationmaster, and the offending conductor would have to receipt for a reprimand. A certain smart conductor staked me to a key to the silver drawer, so I could protect him. At the same time he said I would occasionally find a little drink in the same drawer.

I'll never forget the night I discovered he had left a flask of Jamaica rum, a bottle of cherries, and other ingredients for mixing a drink. Innocently unaware of the potency of Jamaica's famous product, I stirred up a water-glass full of rum, flavored with whatever came handy, and absorbed the same. It struck bottom like a depth bomb; and my inspecting, for the time being, stopped right there. Knowing that it wouldn't be long before the yard crew dragged the train away, I tried to get off—but I couldn't find the door! Well, I rode that diner down to the coach yard. The long walk back in the darkness sobered me enough to finish the night. I never again monkeyed with rum.

Southbound trains leaving Washington Terminal made their exit through a tunnel that led from the depot to the Long Bridge over the Potomac. One night the trackwalker who patrolled this tunnel came tearing into the lamp room, where we loafed between trains, shouting that he had seen a ghost.

The poor guy seemed to be scared out of his wits. We couldn't get much explanation from him except the statement that something white had come toward him, moaning and groaning in the dark tunnel. The trackwalker flatly refused to go back to his job, but we car-whackers, encouraged by having company, investigated in a body.

About a third of our way through the tunnel we sighted the apparition and heard the wailing. I could feel the hair rise on the back of my neck and I'd be willing to bet that the rest of the gang were as badly frightened as I was. Anyhow, we mustered enough courage to approach the "ghost"—and found a lone woman dressed in a long white nightgown. She claimed to have been pushed off a sleeper by someone, but her serious injuries and the shock evidently had rendered her incapable of explaining coherently. We got her out through an emergency exit and called an ambulance. Strange as it may seem, we never heard later what had happened to her.

And now, from my home at 10 Bergen Ave., Jersey City, N.J., I have given you the highlights of many years of railroading, in the hope that some other old-timer might get a chuckle or two and younger lads might pick up a helpful tip from my blunders. There aren't many thrills in the life of a car-whacker; but if you like railroading, any old job around a railroad is interesting.

My First Train Order

By JOHN PAUL MILLS

THE FIRST railroading job I got came my way partly on account of a kid of my own age. I was studying telegraphy at the time, and when I saw a boy of seventeen blow into the railroad depot and get himself hired, it gave me ideas. He helped me to get a job, all right, but not exactly as I expected.

One hot August afternoon, back in 1912, I was dozing and dreaming beside a rattling telegraph sounder in the Missouri Pacific station at Osawatomie, Kan. My boss, Guy Williams, wire chief and Western Union manager, was copying a local message, and B. C. Andrews, "Andy" we called him, was across the table working with Pueblo, Colo. I was on hand to deliver telegrams and to pick up all I could about the business. This particular afternoon was duller than usual, I thought, as I watched a fly buzz in and out of the open window.

Suddenly the office door burst open and in stalked a grimy-faced boy no older than I. He leaned over the train-register counter and stared at us. Mr. Williams, Andy, and I glared back, noticing how dirty he was. His clothes looked as if he'd slept in them and the shirt under his wrinkled coat had once been white.

"Hey! Where's the chief dispatcher?" he demanded.

"Upstairs," snapped Mr. Williams, and as the boy dashed for the steps, I couldn't help wondering what kind of a reception the kid was going to get from W. L. Vawter, chief for the Central Kansas Division. To ask him for a job was the height of my ambition, and I knew I'd never risk it until I really could handle the key.

"He's no operator," said my boss, jerking his thumb in the direction of the dirty-faced youngster disappearing up the stairway.

Andy Andrews laughed, "Maybe he's a boomer."

Mr. Williams snorted and went back to his messages on the table.

I was interested: the boy wasn't much older than I, and if he was taken on, maybe they'd hire me. I went upstairs and idly looked through the open door of Mr. Vawter's office. The boy was sitting at the table taking the examination. As I watched, I began to wonder whether I could hold a job.

Downstairs in the relay office, I approached Mr. Williams about my chances of going to work for the railroad.

"You can't telegraph!" he exclaimed. "You couldn't keep an operator's spot if you got one."

I didn't say anything but I didn't agree, and waited for Mr. Lofv, the chief dispatcher's clerk, to come downstairs on his way home, but some Western Union messages came in, which had to be delivered. When I came back, the offices upstairs were closed.

After supper I returned to practice, hoping that I would get a chance to talk to Andy, but he was busy all evening. Ted Case, third trick operator at the yard office, came along on his way to work and I mentioned the kid. This was news to him, but he told me Mr. Day, who worked the first trick, wanted a few days off and maybe they'd hired the kid to relieve him.

"He'd better be good," Ted added. "That first trick is a hot job."

The next morning I ran errands and delivered telegrams so it was two o'clock before I had a chance to sit down at the telegraph table and practice. I was just trying to get the figures that Mr. Williams was copying for the twenty-two report when Mr. Lofv bawled down the message chute from the chief dispatcher's office. I leaped across the room to answer him.

"Come up here quick," he ordered, recognizing my voice. "I want you to go to the yard with me and get to work."

If Mr. Lofv wanted me to fill in at "D"

office, I must be good. I pounded upstairs on a dead run, but the run became a walk and finally a reluctant process of getting there. My confidence was disappearing fast: copying train orders and messages in "D" office was a man-sized job.

At the door of Mr. Vawter's office, I hesitated. His clerk, Mr. Lofv, was alone, talking over the telephone. Seeing me, he slapped the receiver on the hook and grabbed his hat.

"Come on," he said, heading for the door. "We're going to the yard. The next time a man tells me he's an operator you can bet I'll give him a wire test even if he's as old as the hills and has enough references to make a catalog. That kid showed me the papers to prove he'd worked from 'Frisco to Chicago—they damn well must have been forged! He's got this road completely tied up from one end to the other!"

ALL ALONG the mile or more from the depot to the yard office, every wheel seemed to be standing still. I noticed that the switching engines were all on spot.

The yard office was just west of the coal chute; it looked more like a shack than anything else, since it had been constructed by jamming the ends of two dismounted bunk cars together. Mr. Gardner, the yardmaster, stood in the shade with a switch list in his hand. He looked up as we approached; his usually amiable

features looked worried and he was scowling. He was a short, heavy-set man and his face was always a little red, but when he saw Mr. Lofv, it turned purple.

"Everything is in a hell of a mess," he howled. "If that punk you sent down here is an operator, or knows anything about a railroad, I'm a banker. Every track is blocked and every switch engine is on spot. According to that fellow's line, you'd think he'd worked from St. Louis to Chicago"—the yardmaster jerked off his hat and threw it to the ground—"but he don't know nothin'!"

"I see that," said Mr. Lofv, heading for the yard office door and hurrying on back to the telegraph department.

The chap who had seemed so self-confident the previous day was a scared greenhorn now: beads of perspiration stood on his forehead and his hands shook as he tried to write. He stared at us.

"Get up!" Mr. Lofv cried, grabbing the back of his chair. "You lied to me, you're no telegraph operator. Things in a hell of a shape—you haven't cleared a southbound train all day. I told you that the Coffeyville dispatcher used the wire."

The kid bolted through the door.

"Straighten up this mess," Mr. Lofv ordered, pointing at the train order pads on the floor and scattered on the table. "I'll move these trains."

When I had things cleaned up, Mr. Lofv let me copy my first train order; he watched and listened as I repeated it. I copied several from the dispatcher on the telephone but when I tried to work with the man at Coffeyville, using Morse, the wire was more than I could handle and Mr. Lofv had to take over. I saw my prospects evaporating: there wasn't going to be any use asking for a job.

When the second trick man came in the door, Mr. Lofv got up from the table, his face covered with carbon streaks and perspiration.

"That fellow lied to me," he groaned. "I thought he was a first-class man."

"HEY! Where's the Chief Dispatcher?" the kid demanded

"You can't put no trust in a kid," the second trick man grumbled, giving me a dirty look.

"John's all right," Mr. Lofv answered. "They need a man at Admire and I'm going to send him down there tomorrow. I was going to send this new op when he finished here, but—. That's a telephone job, John can handle it."

"You can work the telephone all right," Mr. Lofv assured me as we returned to the depot. "But never make out you know something when you don't."

"Where in the devil have you been?" Mr. Williams asked when I walked into the relay office.

"Helping straighten out 'D' office," I explained, in an important voice. "That boy he hired was a false alarm. Mr. Lofv gave me a job and I'm going to Admire tomorrow."

"Admire!" he shouted. Then he laughed. "Oh, I see, that's telephone work. You can do that fine and you'll learn as you go along. I'm tickled you got a job."

Counterfeit

By N. L. GLOVER

BEING night telegrapher at Valley Junction, Wisconsin, on the Eastern Division of the Chicago, St. Paul, Minneapolis & Omaha, more than fifty years ago, included several jobs besides taking train orders. The switch lamps had to be put on the targets every evening, and it was my responsibility to see that they stayed lit all night. Then the station floors had to be swept, and fires kept burning in the office and waiting room stoves if the weather was cold. It was my job, too, to sell tickets for the evening and early morning trains.

The station agent, who was also day op, had charge of the passenger business, and he checked me in and out when I came on duty and left in the morning. I was responsible to him for an accurate accounting of cash and tickets sold. One morning when the agent, a big, heavy-set man named Putnam, was looking over the receipts, I was startled to hear him say:

"Well, young man, you owe me just six dollars!"

"What!" I exclaimed. "Did I make that much of a mistake in change on the tickets I sold?"

"No—you just took in six bogus dollars! Look at 'em—they ring all right and look like the real thing, but they're light. Bet they don't weigh more'n half an ounce."

I looked then at the shiny, metal pieces in Mr. Putnam's hand, and realized that he was right. My monthly salary was forty-five dollars, and I felt gloomy at the thought of subtracting six of them to make up this deficit. The agent must have noticed the look on my face, for he laughed.

"Don't feel so bad about it, Glover. I got seven of these things myself yesterday, and I didn't know it until I checked my receipts. I didn't think to warn you—besides I felt damned foolish about being taken in by them. Here's my seven and yours; you can have the whole bunch if you'll give me six honest dollars."

I took the thirteen worthless chunks of metal, wrapped them up carefully, and sent them by express to the U. S. Treasury in Washington, with a letter explaining fully how they had come into my hands. I heard nothing about the matter, and soon gave up wondering whether I'd ever find out the solution to the mystery.

One evening about a month later, I was hanging up a lamp half a mile or so from the depot, when I noticed a hobo coming up the track toward me. As I got down from the switch stand, he came up to me and said:

"Your name Glover?"

I was more than surprised that a 'bo should know my name. I suspected he might be up to some sort of devilment, so I answered him belligerently that I was Glover and what was he going to do about it.

"Look here, young man," he answered, "I'm from the U. S. Secret Service, and I want you to do exactly as I tell you, or you'll find yourself in trouble. Go back to the depot, pull down all the curtains in the building, say nothing to anybody, and let no one into the office; but open up when I rap the Morse code letter 'C' on the door."

I wasn't afraid of an ordinary hobo, but this fellow had the drop on me, with his tough talk and forceful manner. I didn't believe that this weary Willy had anything to do with the Secret Service but at the moment, anyway, I decided to string along and see what his game was. Back in the office, I did as he directed, but I also locked the cash safe and ticket case, and took my revolver from its place in the telegraph table drawer.

A FEW MINUTES later I heard the 'C' on the door. Shoving the firearm into my pocket, I let the man in. He took my chair, drew a paper from an inside pocket, and handed it to me. As I looked at it, he said:

"You see the Great Seal of the United States, and can recognize that it is genuine."

Only after carefully inspecting the document did I realize that the stranger was actually a Treasury Department agent in disguise, sent to investigate the counterfeit money I had reported. When I handed back his commission, he asked if I were satisfied, and I replied that I was, completely.

The Federal officer settled back into the chair and directed me to talk. "Tell me in detail everything and anything you know that might help to locate the men who are making or using these counterfeit dollars."

I recalled then an odd conversation I'd had with a fellow who lived in Valley Junction, shortly after the bogus money episode. I'd forgotten about it, but the government agent's insistence on detail made me realize that there was something I could tell him.

"There's a carpenter here in town, named Edwards," I began. "He comes around the depot frequently—likes to talk—and has always been very friendly to me. I told him once about how I'd lost six dollars by taking counterfeit. He laughed sort of foolishly, I thought, and said he had a relative over in Tomah who had once offered to sell him some of these lead-and-glass mixtures for fifty cents each."

"You're sure Edwards said 'sell'?" queried the detective.

"Yes, that's right."

"Is there anything else— any more of the money turn up? Did Edwards ever mention the subject again?"

"No," I replied, "that's absolutely all I can think of."

The Federal man drummed his fingers lightly on one of the telegraph keys, but I noticed that the cutout was closed. Then he looked at his watch, and asked me where Edwards lived. I told him about a quarter of a mile from the station.

"Can you go and get him here?" the detective asked.

I explained that an operator must be on duty at all times to receive train orders and that I'd lose my job if the dispatcher were to call "Vj" and get no answer.

"All right, do it this way," my visitor answered. "Call the dispatcher and tell him that one of the switch lamps has gone out—you'll be gone about fifteen minutes to replace it. Go and see Edwards; tell him you've got a man at the depot who wants a carpenter for a special job, at once; offer him more than the regular wages hereabouts, and don't let him get any idea of what is in the wind."

The dispatcher made no objection to my relighting the switch lamp, and in due time I had the carpenter in the office. Edwards said enough to tell the government agent that he knew a good deal

about the counterfeiting ring in that part of the country, and he was taken into custody by the Federal authorities. I heard no more about the matter, but about a month later that the Edwards family shipped their belongings by freight to an eastern city and left Valley Junction.

Naturally I was curious to know what had become of the case, and sometime afterwards I wrote a letter to the Secret Service investigator who had visited me at the station, asking if he could tell me what had finally happened. I found out then that Edwards was not connected with the counterfeiting, but that he knew men who were; they were new-comers in the racket, duped by a gang of professionals, who sold them the lead-and-glass formula, at a very high price. The original crowd had been caught, but Edwards, fearing that some of the criminals might attempt revenge, had gone East to live.

Hard Conductor

By E. S. DELLINGER

WHENEVER I hear new railroaders shooting the breeze about hard conductors, I always think of an old skipper who used to run trains for the Frisco, out of Springfield, Mo. I had my first encounter with him in the summer of 1918. After being off the road for eleven years, I hired out on the Eastern Division there, and before I really got back into the game, the call came for me to go west to Monett, on a turn-around run.

"What conductor?" I asked the boy, when he stopped at my house about 2:30 one June afternoon.

"Old Hank Poff," he replied in a tone that indicated no affection for this railroader.

After signing the book, I returned to my conversation with a switchman who lived next door; he had dropped in to get acquainted and we were talking and joking about some of the mistakes I'd made since getting back to the road.

"Did that callboy say you were going out with Poff?" he asked. "You certainly don't want to pull any boners on that guy."

"Why not for him?" I inquired, laughing.

"Because he's got a tongue and a temper like hell's own angels, and he don't like student brakemen. The boys tell me he's the hardest man to work for on the whole Frisco System."

When I went to the yard office, I found I was to work the smoky end on a deadhead equipment train—fourteen empty Pullmans going to Fort Sill, Okla., for a load of soldiers. As I brought the engine from the house, the conductor was waiting at the head end with a handful of flimsies.

He was an old man, sixty-three, I learned later—tall, angular, and nervous. Sharp blue eyes were partially concealed behind horn-rimmed spectacles; his head was as bare as a billiard ball except for a thin fringe of white hair around the base of his skull; and one side of his face was scarred by a peculiar reddish discoloration which I imagined had been left there as the mark of some early railroad disaster.

Poff watched critically while I squirmed and twisted, trying to couple the air hose connections. When I backed out from between the cars, he spoke accusingly:

"New man here, ain't you?"

I admitted the charge.

"How long have you been at work?"

"About a week."

"Did you ever railroad before?"

"Yes, I used to work on the Missouri Pacific." I did not tell him when nor how long ago.

THE YEAR I broke for Hank Poff was one of the happiest I ever spent

He marked me up in his trainbook, told me there would be nothing to do but ride on the westbound run. We would eat supper in Monett, where the Kansas, Oklahoma, and Arkansas lines feed their traffic into the Frisco's main stem running into St. Louis.

We started about three o'clock. By nine, we had delivered our cars into Monett, and were ready to leave for the return trip with an oil train. I don't remember how big a drag we had, but it was more tonnage than our engine was rated to have, for Hank told me, when he came over with the orders, that we would probably double the hill into Aurora.

The engineer was a boomer—I've forgotten his name—but he knew how to handle engines and he loved to wheel them fast. Working steam all the way down Verona Hill, we went over the crossing at the east end of town running just as fast as our wheels would turn. I figured he was trying to *run* his excess tonnage up the hill so we would not have to double, but I missed my guess. He had no such intention.

ROARING up the grade, the engineer blared into the hard pull at ten or twelve miles an hour; suddenly he shut off steam, stopped and whistled out a flag. I was in the usual student brakeman's position—decorating the head car, so I clambered awkwardly off of it, and went up to the engine, expecting to find the hoghead down on the ground shooting trouble. He wasn't. He was sitting up in his cab with his cap on the back of his head, whistling. I shouted up to ask him why he had stopped.

"To double this hill, of course," he shouted down. "Don't you know we have too big a drag?"

That was a new one on me. I thought you doubled only when your engine bogged down. I did not know then that if an ethical brother had doubling tonnage, he stopped whether he stuck or not, because if he risked his neck trying to *run* trains up the hills, officials would soon get wise and increase the tonnage so all engineers would have to risk their necks *running* them up.

Puzzling over the proposition, I started walking hastily toward the rear. The conductor I had been out with the night before had told me it was good idea always to cut off more than half, the train in the head cut, because the engineer could start them with less effort if he could shove the head end back against the locked rear and take plenty of slack. I remembered his instruction, but before I had even reached the middle of the train, I saw Hank. He was coming fast and he was talking to himself. When he was still three cars away, he bawled out:

"Where in blazin' hell do you think you're goin'?"

I didn't like his tone. I said hotly: "I'm goin' back here to cut off these cars and make this double, of course."

"Well you don't have to walk clear back to the caboose to make it. . ."

"Mr. Page told me last night. . .", I began, but Poff broke in on my alibi:

"I don't give a damn what Pig Iron Page told you. He's not running my trains or telling my brakemen how to do their work. Cut off them cars there. Cut 'em off anywhere; but hurry up and let's get out of here so we can go to Marionville for Number 1."

I started in between the cars to make the cut; but Hank came barging up, shoved me out of his way, and did the job himself. He kept talking hard and fast while he worked. He kept right on talking all the way up the hill. I don't remember exactly what he said, but it was the most abusive lecture on student brakemen and bull-headed engineers that I ever listened to. I was boiling with rage by the time we got back, and didn't cool off for a long time. Fortunately, I was not called to brake for Poff again for several months.

AS BUSINESS picked up, fifty extra brakemen were hired and several new crews were put in the freight pool, so I caught a regular run, with Conductor Jim Crain. When the old head who flagged for him was promoted, I went back to work the rear end, with Ernie Saunders

assigned to the crew as head brakeman.

Crain was a fine fellow to work for. With his brother John, who was local chairman of the B.R.T., he was one of the best-liked conductors on the district. He and Saunders and I got along well together. I hoped to go on braking for him. But changes come quickly in wartime: in the early fall, Crain bid in a turnaround run from Springfield to Monett and left a vacancy for a conductor in the 709 caboose.

Saunders and I were both sorry to see Crain go, especially because we knew Hank Poff was next man up for a regular run. Saunders had had a fuss with him, too, so we agreed that if he did bid in 709, we would mark off and take the extra board.

Sure enough, Poff took the job. I went straight to the yard office and talked to the caller.

"I'm going to mark off that crew," I told him.

"What's the matter?"

"I won't work for Old Hank Poff."

"Poff's all right," the caller said soothingly. "He talks hard, but he don't mean a thing by it. He's a good-hearted old guy, and a good conductor to work for, once he finds out you're willing to hit the ball."

"I'm willing to do that," I said, "but I don't like Poff, and I won't work for him."

"You'll have to make one trip," the caller stated. "You can't just quit a run because you don't like a man. You've got to have a reason for quitting, and you can't have one till you've worked on the crew."

I agreed to make just one trip, but that was all.

The old boy didn't show up for the run that night—an extra conductor took it out. We went east to Newburg and caught a troop train back in, loaded with new men going down to Fort Sill.

At Springfield, passengers go to the station several miles south of the freight-yard; we put our train into the depot in the small hours of the morning. The street cars had stopped, and the owl car, running every hour, would be due for the north end just about the time we got into clear. Unless I caught it, I knew I'd have to stay out there and wait for the next one or walk four miles home, so I rode the caboose into clear, jerked the markers off the rear and set them inside the door. I didn't bother to put them in the locker or sweep the floor—there'd be time for that in the morning.

AFTER EIGHT hours of sound sleep, I hurried back to the yards to clean up my caboose before leaving time. Although the crew had not yet been called, the new conductor was there. He had evidently been there all morning. There was a new stationery cabinet in the caboose and a new table which didn't have oil all over it. He'd also done some other things which I learned about a few minutes later.

My heart almost went out through my shoe soles when I saw my caboose. The yard crew which had brought it over from the south side must have tried their darnedest to ram another one through it. The marker lamps were upset, oil had all run out of them and spread over my dusty floor, where water splashed from the barrel had joined with it to make one of the dirtiest messes I have ever seen in a waycar.

Hank was just starting in to clean it up. He leaned the broom against the locker and glowered at me, as if he would relish the task of eating me raw.

"Are you the hind brakeman?" he demanded.

I admitted I was.

The conductor now had not only a victim but a motive. He let loose another of those vicious lectures. Though I don't recall what he said, I do remember that I was mad enough to commit murder, though there was some reason for his wrath this time.

I went back to the office and tried to persuade the caller to mark me off the crew; but he had already called us, so he refused, insisting that I must make at least one trip. I was to report to him when I came home.

We left town early in the afternoon. It was raining then. We crawled along with forty cars of oil, pulling through side tracks, waiting for troop trains and merchandise trains so that it must have been nearly midnight when we came into Lebanon.

Lebanon was the mid-division water stop. We ate a lunch there, looked over the train, and left shortly after midnight going to Sleeper, seven miles east for coal. It was literally pouring rain when we pulled up to the chute and stopped; but rain or no rain, I followed my habit of looking trains over at every stop, as I had learned on my runs with Jim Crain.

I put on my slicker and struck out for the head end, flashing my light over the wheels and running gear. I found nothing on the first twenty cars; but the twenty-first one did not look right. It appeared to be tilted slightly toward the right front corner. Looking closely, I saw that the arch bar was broken, and the whole load was leaning toward Memphis, ready to turn over on the first curve.

I ran back to the rear and told Poff what I had found. The hoghead was just whistling off, but the skipper pulled the air on him. Poff said nothing but glowered at me as if I was pulling some gag to make him get out into the rain; but whatever he thought, he put on his slicker and went to look the car over. I asked what he was going to do with it.

"Set it out, of course," he snapped. "You go over to the headend and tell that hogger to pull it up over the switch and set it in the coal track. Tell him to go slow and watch me for a signal."

I relayed the message to the engineer and walked back to the car. The conductor rode the step right over it, and never took his eye off the break until we had set it safely in the clear. I do not know what report he made of it. He did not say a word to me about it then. He went back to his caboose, hunted out the bill and left it, and sat in the cupola from there to Newburg, staring out over the rain-washed cylinders of black rolling on ahead.

HE DID NOT speak to me nor I to him on the trip in, nor again when we were called out to Newburg the following afternoon with ninety empty coal cars going west. You do not expect hot boxes on a string of empties, but that string was the exception. I do not know how many we had; but I know that both Saunders and I fought them the whole way over the road. We repacked them; we used pin grease on them; we watered them and soaped them and did everything else we had learned to do to keep a car running.

After fourteen hours of this rawhiding, we headed into the passing track at Stafford, twelve miles from home, with empty water barrel, but with no smoke showing. I hit the floor again, set out the dope pail, and began dipping the last few pints of water out of the barrel with a tin can. Hank was sitting up in the cupola smoking. He leaned over and bawled down to me:

"Where are you goin' now?"

"Goin' out to look after these boxes, of course," I answered shortly.

"Let 'em alone. If they won't run from here to Springfield, let 'em burn off. Come up here and sit down. I want to talk to you."

Wondering what earthly reason he could have for wanting to talk to me, I put away my equipment and climbed into the cupola on the other side. He did not begin his conversation at once. He sat there puffing at his pipe, and staring out over the string of empty coal cars. Finally, when I had about decided he had changed his mind, he knocked the ashes out of his pipe and said:

"Dellinger, I like the way you've handled this train today."

I almost fell out of the cupola, but I didn't say anything. I sat there thinking: I'm still going to mark up on the extra board when I get back into Springfield.

"I like to see a brakeman take an interest in his work," he continued, talking rapidly. "You've done that today. You've proved yourself so far as I'm concerned. You've had more hot boxes on this train than I've seen on one since I've been here.

You're taking every one of them in. I like that. And I like the way you went out in that deluge last night and found that broken archbar. If you'd sat in your caboose, like lots of brakemen I've seen, we'd have had a half-million dollar wreck, and maybe burned up a trainload of gasoline the men need in France."

Maybe I made some lame comment about trying to do my best. Maybe I said nothing. But I was thinking hard about having to buck the extra board all winter and go back to riding the smoky end. My determination to leave was wavering. Hank smashed it with his next few comments.

"You don't drink, do you?"

"No sir, I don't," I answered.

"So much the better. Liquor and railroading don't go together. Now, you stay right here on this car with me, and I'll make a railroader out of you. Can you cook?"

I said I could.

"That's fine. Tell you what we'll do, son. I've already spotted a nice board that will make us a good table to eat off of. I've spoken to the supply department about exchanging this old stove for a flat-topped one. You bring in a few cooking utensils and some dishes. I'll bring some from home and we can buy our food, cook it here on the car and live like kings on half what it costs us around the slop houses. What do you say?"

Of course, I said yes. When a fellow puts it up to you like that, you can't say anything else.

"All right," he finished. "That's settled, and I can see right now you and me are going to be regular buddies. Now you can go downstairs and sweep out the car while we're waiting here, so you won't have it to do when we get into Springfield. And when you take off your markers, put 'em in the locker. I've made good solid racks in there, so if the caboose gets a hard kick in switching they won't turn over."

I FOLLOWED his suggestion, and that day I began in real earnest to learn the fundamentals of railroading which have stood me in good stead these seventeen years since I've been writing it down. He taught me what he could of train orders, and how to read and interpret them; how to figure meeting points, fill out report forms, and switch cars. Sometimes at night when he'd be down stairs making his reports and I'd be in the cupola watching the train, he'd appear silently at the foot of the cupola ladder and call up to me:

"Where are you goin' for Number 9? What time is Number 1 due at Lebanon on that last order? Did you notice whether that block signal at the west end of Stafford was red or green when we came through?"

I knew he was doing it to check on me, to see whether I was awake. That was one rule on our crew—when one of us slept, the other kept the watch; I'll say frankly that he did not do all the sleeping. Another rule was that when a man left the caboose to go forward, the other stayed back, unless we were safe in siding with the switch locked behind us. If we could possibly take a car in, we tried to avoid setting it out; we never stayed in a sidetrack to meet two trains if we had time to go to another one for one of them. I've helped Hank brass cars of wheat and scrap in order to keep from setting them out and cluttering up the tracks, though we couldn't always do that on account of delays.

That was one of the happiest winters I have ever spent. Men around the Springfield yards asked me how I liked Poff, and most of them, who really did not know him, were astonished when I said I could not ask for better treatment from any conductor.

This set-up, which was very satisfactory to both of us, was almost changed by a new man bumping on the crew, replacing Ernie Saunders. He was older than I, with several years seniority, and had joined us with the avowed intention of sending me to the head end while he took the rear. No brakeman ever wants to be up front on winter runs—it's a nasty job then.

He showed up the night after he bumped Saunders, and said to me:

"You can go to the roundhouse and bring out the goat tonight, Dellinger. I'll do the flagging."

I had expected that. He was an older man than I, and entitled to exercise his right if he wanted to. So I shrugged my shoulders and went to the house for the engine. Hank was at the head end when I coupled up, so was Paul, the new brakeman. I had no sooner hit the ground than Hank tied into me.

"What are you trying to do?" he demanded.

"New man says he's taking the rear end," I answered.

"The new man's not running my crew."

"Our trainmen's contract says the oldest man on the crew has choice of working positions," said Paul.

"Yes," the skipper retorted, "but the conductor's contract says he's got the right to place his men where he wants 'em. I want Dellinger on the rear end. When I want you to work ahead," he added turning to me, "I'll tell you."

WHEN THE WAR ended, business fell off. Men who had been serving overseas returned to claim seniority.

Came the squeeze, and from the time I went on the extra board, I barely made a day-to-day living. Men were gradually returning—nineteen ex-doughboys had reclaimed their old jobs by spring. With these railroaders on hand, the Super called some of us into his office and advised us to take an indefinite leave of absence, a way out that at least would let us keep our seniority. He assured us that we would be called back.

Rumors of returning business came, and finally, on the 16th of June, I was called east on a troop train coming from an demobilization camp. I don't think I ever experienced a greater thrill than I did that Sunday afternoon when the call-boy came ordering me out on this run.

Early that month, I had gone down to Lebanon, Missouri, to work the head end on the local job between there and Newburg. The regular conductor had laid off and Poff was holding the turn. We made up our own train in the Lebanon yards, got away about eight or nine o'clock, and landed in Dixon at noon.

One day toward the end of August, while we were eating lunch at our boarding house, the operator came from the depot with a telegram for me. It was from my wife, and read:

COME HOME TONIGHT. DON'T BE ALARMED.

Hank was watching me. He knew that Mrs. Dellinger had been seriously ill and was only recently able to be up. He asked what was wrong. I gave him the wire.

He read it, jerked out his watch, and figured the time. No. 13, the westbound local passenger train, was due there in about thirty minutes.

"Now, listen, man," Hank began. "You run back to the caboose and pack your grip. I'll call the dispatcher and have a wire pass here to ride Thirteen in."

"But she said not to be alarmed," I argued. "I can go on into Newburg and come back on Nine."

"You'll do nothing of the kind. That woman wants you, or she wouldn't have wired for you. The rest of us can switch these cars and unload this freight. If we can't, it can go undone. You're going home on Thirteen.

Poff came into the coach with me when we got to the station. With a strong handshake, he mumbled something about things being all right at home.

That was the last time I saw him. When I got back to Springfield, I found that the telegram meant new prospects for me, and not long afterwards I was heading for the Far West.

Although I never saw Hank Poff again, I have always remembered him. He was *Dynamite Dan Ravelstone* and *Old Jack Frost;* he was the pattern for many fiction characters who have been forced to conceal their real natures behind a hard-bitten exterior, in order to hold their own among the railroaders they must boss. Hank Poff was, I think, the typical *Hard Conductor.*

Photo from Railroad Photographic Club, 47 Royal St., Allston, Mass.

BOSTON & MAINE ***Berkshire*** Number 4012 gets under way with a heavy southbound freight, over Cheapside bridge at Deerfield, Mass. Coffin feedwater heater gives this Lima-built giant its massive overthrust. Note booster engine exhaust on tender

On *the* Spot

Rails and Fans Sit in with the Editorial Crew to Swap Experiences and Settle Arguments

Myra Barlow

WHEN the war brought a shortage of telegraph operators, C. C. Barlow, Louisville & Nashville agent at Caryville, Fla., began training young folks at Caryville to telegraph, handle train orders and perform routine station work. He has since "graduated" half a dozen girls and one fellow, all of whom were immediately assigned to active jobs on the Pensacola Division. Agent Barlow is deservedly proud of his pupils. Six are working for the L&N today; one married and left the service.

Among the girls he trained is his niece, Miss Myra L. Barlow, who is now a third-trick op at Marianna, Fla. Myra comes from a railroad family. She was born at Munson, Fla., on August 5th, 1922. Besides the uncle, her father, L. R. Barlow, is an L&N patrolman; and her grandfather, J. B. Barlow, was a fireman and engineer on the old Yellow River Railroad that operated in Florida between Crestview and Florala and was taken over by the L&N in 1895.

"I wanted to do my part in helping to win the war," Myra tells us, "so I took this job after two months' training. My hours are from midnight to 8 a.m. At first I was a bit nervous, because I had never before worked at night and I did not want to make mistakes that might cause trouble; but after a short time this feeling wore off. I am an operator clerk, which means that in addition to handling train orders, I also sell tickets, check baggage, make out reports.

"In my work I meet many people, including men in the armed forces. Naturally a girl gets a thrill out of that. Among other pleasant experiences was a caboose hop from my place of work to my home town. It was the first time I had ever ridden a freight. I was allowed to sit up in the cupola and look out over the train as it snaked around curves. Another girl op rode with me. The crew were very nice, serving us a piping hot breakfast of ham, eggs, coffee, etc., prepared in the caboose. It was a ride we will never forget."

One morning about four o'clock, before Myra had become used to night work, she was quite drowsy.

"I had some *31* orders to deliver to a southbound train meeting a northbound just south of my station," she says. "As you know, *31* orders have to be signed for, and my dispatcher was waiting to get the signatures. But after I had the signatures, instead of immediately giving them to DS over the wire, I was so sleepy that I tried to report the train as by my station. This slip gave the dispatcher a panic. He thought I had let the train pass without the orders,

Courtesy of H. B. Hough and Harry F. Thomas

NARROW-GAGE SIX-WHEELER, named successively the ***Active***, the ***Edgartown*** and the ***South Beach***, pulls her lone coach out of the engine house for a day's work on the Martha's Vineyard Railroad. Built by H. K. Porter, Pittsburgh, Pa., in 1874, she fell into Buzzards Bay before being delivered to the island

which probably would have caused a smash-up. Then I reported the signatures. He must have heaved a sigh of relief and he asked me never to scare him like that again."

* * *

ISLAND NARROW-GAGES. Harry F. Thomas' article, "Salt Spray on the Rails" *(Aug. '43)*, telling of two small roads on the islands of Nantucket and Martha's Vineyard respectively, off the Massachusetts coast, prompted the Rev. William E. Soule, St. George's School, Newport, R.I., to write his recollections of the Nantucket road.

"For years the original locomotive, *Dionis*, did all the work on this line," he states, "while her companion, the *'Sconset*, was allowed to rust in a shed. *Dionis* fascinated me as a small boy. Her tender was so low that when I was at the car's front window I could watch the engineer at work in his cab. On one exciting occasion I was allowed to ride the cab as the train ran from Steamboat Wharf to the foot of Main Street.

"Most interesting operation of all occurred on the return from Siasconset. There being no turntable, *Dionis* always ran backward on the westbound run. After making the Main Street stop, she would push her train back toward Siasconset for perhaps a hundred yards, while the fireman would take his place by the stub switch at Main Street depot. Meanwhile, Conductor Chase

Courtesy of H. B. Hough and Harry F. Thomas, 194 Water St., Stonington, Conn.

FROM AN OLD ALBUM comes this rare view of Martha's Vineyard, an island off the Massachusetts coast, showing a narrow-gage train meeting the steamer ***Gay Head.*** Part of the track was laid on pilings on the beach, ocean waves washing under it night and day. At the left you see the fashionable Sea Beach Hotel

would take his place on the front platform, crouching low with hand on the old-fashioned coupling pin. Now in reverse, *Dionis* gave her cars a good pull and then slacked up a bit. Mr. Chase yanked out the pin, stood up straight, and waved to the engineer, who then opened his throttle so that *Dionis* darted away and up the siding, while the two-car train coasted on toward Steamboat Wharf terminus, to be checked at the proper time with his hand-brake.

"One time the hand-brake failed to hold. The train rammed the stout piling which served as a bumper, knocked it over, and ran off the end of the rails."

Usually the train consisted of a little baggage car and a coach with wooden seats made double, back to back. There were also a flatcar, for service when needed, and an open car somewhat like a summer trolley. Years later the double-seated coach became a lunch cart, without its wheels, standing forlornly near the Main Street depot.

To William Soule, as to many other lads, *Dionis* was a real personality; and he had her name painted on his sled. At the time he was ten he learned with sadness that the old locomotive was worn out and would be junked and replaced by one from the Boston, Revere Beach & Lynn. When William reached Nantucket with his family for their next summer vacation, one of his first acts was to ask what had become of *Dionis*. He was told that she had just been broken up and the pieces were loaded on a sailing vessel which would take them to a mainland scrap heap. Since the vessel had not yet sailed, William had the melancholy pleasure of seeing the pilot of his boyhood idol on the schooner's deck.

The new engine was, like *Dionis,* a 4-4-0 type; but she lacked the huge spark arrester on top of the stack, while her headlight was placed above the boiler instead of being set on a bracket over the pilot like the headlight of *Dionis*. Also, she had a power-brake, worked by steam, which made a great noise as it went into action at the end of a "flying switch." This former BRB&L engine, which apparently never had a name, gave place in 1917 to two gasoline cars on the Nantucket road.

"Unlike most railroads," the Rev. Mr. Soule concludes, "the one on Nantucket had little direct competition from automobiles. Early in the 1900s a law was passed excluding motor vehicles from the island. But as costs increased, during the first World War, the little railroad could not earn enough by its purely summer operation, and by 1917 the soaring price of scrap metal made its sale inevitable. With the railroad dismantled, there was no longer much point in keeping automobiles off the island, so the law was repealed. But Nantucket is not the same."

NYNHaH photo from Harry F. Thomas

"WIDOW'S WALK"—that's what Nantucket folk call the lookout porch on the roof of many an old home in this once-famous whaling community

According to Mr. Thomas, the engine *Dionis* was named for the wife of Tristram Coffin, an early settler and the town's chief magistrate, a Devonshire man who came to America in 1642. Since the railroad operated only in summer, *Dionis* was laid up all winter in the engine house, while the islanders heard the howl of winter gales instead of the engine's cheery whistle. Mr. Thomas quotes the following account of the opening of the Nantucket line in 1881 from the *Inquirer and Mirror,* a local newspaper:

"The train was run to the starting point, the boiler and tank filled with water, the fire started, and soon the assembled crowd was greeted with the sound of hissing steam, and the indicator in the cab gradually moved up until it reached the required figures. The peal of the first locomotive bell, the shriek of the first locomotive whistle in our land was heard. Engineer C. M. Stansbury

pulled the throttle, the wheels revolved, and the *Dionis* and her tender, trimmed with gay flags, moved slowly over the road, greeted by the shouts of hundreds assembled. As 'All aboard!' sounded from the conductor's lips, the cars filled rapidly and soon several hundred people were being borne on a real Nantucket railroad."

Timetables stated: "A special service is offered to parties desiring to picnic or gather flowers upon the moors. Trains will stop on signal at any point between Nantucket and 'Sconset."

As for the other island, Martha's Vineyard, the *Vineyard Gazette* predicted on April 17th, 1874: "When we have a railroad, we shall see improvement made in our village never before thought of. The snort of the iron horse will arouse men from their lethargy and infuse new life into their veins" —an utterance typical of Edgar Marchant, the old editor.

Mr. Thomas informs us that on certain days the town crier of Martha's Vineyard, a Negro named George Washington Peckstout Glorious Valorious, would go about the streets ringing his bell and telling the people when the train would leave for Katana, famed for its clam bakes—fare one dollar, including the dinner. Among the summer attractions was always the surf at South Beach. When the breakers were running high, a bulletin in front of Sea View Hotel announced that fact, and trains carried crowds to the island's south shore to view the sea god in an angry mood.

Late in June, 1899, the locomotive *Active* was hung with black crepe and steamed from Edgartown to Cottage City with the body of Capt. Nathaniel M. Jernegan, a promoter and early director of the road, who had died in Boston and was being brought home for burial, to sleep out eternity on his native island. Capt. Grafton N. Collins, another promoter and director of the road, died at about the same time and the mourning tokens remained on the engine in his honor.

Other members of the MV narrow-gage management, including President Carpenter, died in 1901 and 1902. In fact, the new century had hardly started before every prominent actor in the promotion of the Martha's Vineyard Railroad had passed away. As for the railroad itself, practically nothing was left by that time but the right-of-way, which land had been bought outright. The trestlework along the beach was gradually liquidated by winter storms and summer sun. Thus, according to Mr. Thomas, ended a noble experiment in railroading.

* * *

RAIL FAMILY. F. H. Milliken, erstwhile Burlington fireman, 18333 Chicago Ave., Lansing, Ill., tells us that his father, a train dispatcher, had 53 years of service, his grandfather 50, and an uncle 55 years.

"There is a station called Viola, on the Galva & Keithsburg branch of the CB&Q," Milliken goes on. "One of my family was working there as agent from the time the CB&Q bought it from the Great American

Courtesy of J. M. Kimball and Harry F. Thomas

ONLY WRECK on the Nantucket narrow-gage was caused by spread rails at South Beach, July 23, 1909. Nobody was hurt

From Carl T. Ray, 761 N. Craig Ave., Pasadena 7, Calif.

PRESIDENT HARDING'S FUNERAL TRAIN was pulled by B&O engine 5233, Engineer George Milton Ray, fireman unidentified, from Garret, Ind., to Willard, Ohio, in August, 1923

Central in about 1870 until 1937. A Bostonian taught my father telegraphy there, when the road was being built, on the old tape system. When the CB&Q purchased the road, grandfather was made agent while father was operator.

"My aunt also was op there for a while, then my uncle became op and later succeeded Grandpa as agent at Viola, serving until he was pensioned in '37. Besides, four cousins of mine worked there at various times. That's quite a record for one family at the same station, compared to which my own three years of firing seem exactly nothing."

* * *

"WANTED: Contact with an eye-witness of the Hagenbeck-Wallace Circus train wreck on the Michigan Central at Ivanhoe, Ind., June 22nd, 1918," writes Irvin H. Cady, 118 Park Place, Alpena, Mich. This rear-end collision, in which 68 persons were killed, 127 injured, was caused by kidney pills, according to testimony of doctors and chemists at the trial of Alonzo K. Sargent, engineer on the empty troop train which plowed into the circus extra. Details of this pile-up may be found in "When the Circus Went West" *(Feb. '35)*.

* * *

CHIEF attraction at the latest Milwaukee hobby show, according to Otto F. Lingel, 706 W. Keefe Ave., Milwaukee 6, Wis., was an American type steam locomotive and five cars exhibited by Otto and his partner, Rudy Flugel. This equipment had been used in amusement parks; but when Otto bought it several years ago, its decrepit condition aroused his sympathy and prompted him to rebuild the engine and cars, with Rudy's aid. The partners have 1000 feet of track two feet wide.

"So long as we are alive," Otto writes fervently, "our train will never find its way to the junk pile."

* * *

GRAVEYARD SHIFT. "Have you ever wondered why the period from midnight to 8 a.m. is called the graveyard shift?" asks E. Stanley Johnson, Canadian Pacific agent, Onawa, Maine, author of "Single Track" *(Feb. issue)*.

"Any train-order operator who has worked this shift knows how hard it is at first to keep awake while on duty," he explains. "He'll try everything—reading, smoking, drinking black coffee—but then will go sound asleep. He is like a sentry on military guard, where the penalty for sleeping on duty is drastic, as it should be, for many lives may depend on the sentry's alertness. Falling asleep on the job has caused many an op to put innocent victims into a graveyard."

Our theory as to the origin of this term is that the hours in question include the quietest of the entire 24, when the hush that envelopes the earth may be compared to that of a cemetery. Mr. Johnson offers

NYC ENGINE 2029 nearing Denmark Jct., Mich., as seen by Brakeman Hinds in the cupola

tips to sleepyheads on the graveyard shift:

"You can keep awake at night if you get enough sleep in daytime. Open your office door and take some deep breathing exercises just outside. Do this once an hour, or whenever your eyelids feel heavy. Leave your order boards displayed at *stop*. Then if you do happen to fall asleep, the worst you can do is stop a train and delay it. At least you won't sleep one by. Make out a clearance form in advance for every train addressed in your train orders. Put the order number on your clearance as soon as you receive it. This gives you a double-check on your orders; you're not likely to overlook one."

* * *

ONE good thing about the war is that it has provided railroad jobs for thousands of fans who otherwise might never have been able to work in this industry which means much more to them than merely their bread and butter. In this group is George E. Hinds, Michigan Railroad Club member and Michigan Central brakeman, 22900 Goddard Road, Inkster, Mich. George was 19 when he landed his present job, two years ago, after working about six months as pipefitter's helper in the MC's West Detroit roundhouse.

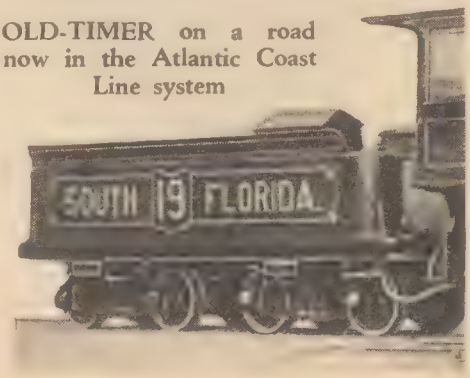
"I spent eleven payless hours over the Book of Rules before qualifying for student trips," he writes. "Then I made the necessary student trips, and was issued an MC road timecard, a Detroit-Windsor yard timetable, an electric lantern and three keys—MC switch key, NYC switch key and waycar key—after which I marked up on the board.

"Our road board is of the rotary type—that is, the extra men work first in, first out. This is in contrast to the strict seniority type, where the oldest man in with his rest has the pick of jobs. I was not paid for student trips. Now, however, a student gets 50 cents an hour for the time he spends riding, this being an extra inducement to attract manpower."

* * *

"SINCE 1905, when I began railroading at 17 as a New York Central crossing flagman, I have spent nearly all of my working time as yard brakeman or conductor here at Schenectady," writes Earl Van Patten, 1051 Forrest Road, Schenectady, N. Y. "During those years I have come across many oddities. For instance, in about 1914, I saw NYC engine 3555 coupled to a caboose of the same number. Later I saw NYC steam engine 7106 coupled to USA Diesel 7106. About three years ago I had NYC loco-

OLD-TIMER on a road now in the Atlantic Coast Line system



motive 7945 pulling my train, the last car of which was D&H 7945. On another trip I had D&H hopper car 8001 and SVCX tank 8001, both billed to Schenectady."

Nor is that all. Earl happened to be in NYC signal station No. 7 when the operator reported train No. 7 by at 7:07 p. m. On another occasion in the same place he heard the op report train No. 1 on track 1 at 1:11 p. m. And he has seen four trains—two eastbound, two westbound—pass each other at the same time, which he claims is not common on a four-track road.

* * *

NEW YORK CENTRAL SYSTEM

GREEN SHACK. "Looking back 52 years to the day I started braking, I have to laugh at some of the bulls I made on my first trip," writes Fred S. Jones, RFD 2, Alpena, Mich. "They didn't come any greener than I was at the age of 23," he continues. "It was July 14th, 1892, when I hired out to R. H. Canfield, Assistant Superintendent of the Fall Brook Railroad (now New York Central), at Corning, N. Y. With no training whatever, I was sent out on a freight run that same day. My conductor was a man named Miller. I need not remind you that those were the days of 'armstrong' brakes and: 'Out, you shacks! Put on the binders and tie her down!'

"Well, we ran light for about 35 miles to Stokesdale Jct., where we picked up 26 empties for the Beech Creek Railroad (now also NYC). The head brakeman, Andy Wasson, instructed me to look over the string of cars and be sure all the brakes were off, also to tie up any places that needed to be tied up. There was a binder on the last car and a coupling to be made, but I didn't do anything about either of them. Instead, I watched Andy swing his lantern in a circle. This gyration seemed crazy to me. Suddenly the motion ceased and Andy came storming back at me, mad as a hornet.

" 'What in hell is this, anyhow?' " he bawled. 'Are you gonna stay here all night? Why don't you couple up, so we can get out of town?'

"I hated to admit it, but I said: 'Neighbor, I don't know a solitary signal.' "

" 'Now, ain't that sweet!' " he growled. 'All right, you stay on the caboose and Miller will show you a few signals.'

"Before we reached Jersey Shore, the Beech Creek junction point, I had managed

Photo by F. E. Shaffer, Weirton, W. Va.

B&O "DOGHOUSE" number C1349 in the yard at Weirton, W. Va.

From collection of C. W. Witbeck, Box 2501, West Jackson, Miss.

Courtesy of W. S. Gilmer, Gunnison, Colo., and "Rio Grande Green Light"

NARROW-GAGE "GALLOWS" TURNTABLE on the old Denver & Rio Grande at Monarch, Colo., as seen by a cameraman August 1, 1884. This structure was replaced by a more modern type six years later. Can anyone tell us the engine number or **names of the men pictured here?**

to give the *all clear* signal at three water tanks; but Mr. Miller continued to instruct me all the way up the Creek line. As we were pulling out of a siding we broke a pin, and again I was up against it, for I had never made a coupling. Any old-timer of that era can tell you what a problem it was to couple onto a beef-tongue drawhead. First you had to insert a pin in the link, then put the pin in the drawhead bottom up to keep it from falling out, and finally block up the link with a small stone to make it high enough to fit the common drawbar. On that July day in 1892 the process was Greek to me; but with the fireman's help I succeeded in getting it done."

Jones concludes: "I am now past 75 and will soon be hitting the long trail instead of the iron trail. Once a railroad man, always in your heart you hanker for the click of wheels and the crossing calls."

* * *

A PRIEST who worked from 1910 to 1912 as hostler and roundhouse boss at the two-stall roundhouse of the Chicago, Milwaukee, St. Paul & Pacific in Bristol, S.D., is the Rev. St. Clair Vannix, now of St. Andrew's Episcopal Church, New Paltz, N.Y., who writes:

"*Railroad Magazine* reminds me of the few years, long ago, when I was close to the rails, firing a few trips for the fun of it and holding the night shift at the roundhouse. I remember well the tragic night of November 11th, 1911, when two freights came together in front of Bristol depot because of someone's failure to throw a switch for a passing track. The westbound engineer was down on the ground oiling around; evidently the eastbound engineer mistook the movements of his torch for a highball. The latter gave two toots, opened up his throttle, and was making 15 or 20 miles per hour when he hit the westbound.

"One or two hoboes were killed; a man riding a *zulu* car with his farm equipment was injured. I ran and got the company doctor. Who can tell me what became of the boomer operator, Olsen, a heavy-set fellow with glasses, who was on duty at that time? Olsen worked the night shift, but after the collision he stayed on duty into daytime to help clean up."

EVEN on the islands of the South Pacific, *Railroad Magazine* is a favorite, according to V-mail reports from the fighting fronts. It follows subscribers wherever they go and is displayed at the Army's service library at many a beach-head and jungle post.

Sgt. Blechman

"Some time ago I sent out a call for ex-railroaders now in the 9th Marines, so I could take their pictures," writes Staff Sgt. Solomon Bleckman, H&S Co., 9th Marines, c/o Fleet Post Office, San Francisco. "I had a huge turnout. Many of the men thought they might be sent home to work on railroads or might be assigned to help build railroads overseas.

"Among the gang who reported we had a couple of train crews, except for engineers. There were firemen from the Pennsy, New York Central, Espee, Cotton Belt and Colorado Coal & Iron; brakemen from all the foregoing, plus the Union Pacific; track workers from the Illinois Central, Santa Fe, Great Northern and Northern Pacific, and shopmen from most of the above, plus the Frisco, GM&O, Lehigh Valley, B&O and Erie. Also a Milwaukee Road signal maintainer, an Espee telegraph op, a UP assistant dispatcher, an L&N railway mail guard, and office employes from a flock of roads."

* * *

"FIRELESS COOKERS." George A. Grove, 2036 Oak Lane, Bethlehem, Pa., tells us that the other day, in talking to an old-time Pennsy shopman, he mentioned that he had been an engineer on a fireless type of locomotive.

"The shopman could not believe it was possible to operate a steam locomotive without having steam made directly on the engine," George continues, "even when I tried to explain to him the principle of maintaining a head of steam. Having operated both a Heisler 'cooker' and one fabricated from an old Porter steamer, I am in a position to know that these engines, although not practical for road work, are ideal in yards where a standpipe or excess steam is available. For size, handling ability and power, I do not think a live-steamer of the same size can

hold a candle to them. The Heisler I ran could handle trains of 20 or 30 overloaded cars on very rough track with apparent ease. By the careful use of sand and steam, I pulled loads weighing up to 2000 tons."

* * *

ORIGIN of the boomer term "night yardmaster at Pocatello" is revealed by "Whit" O'Malley, 434 N. Buchanan, Pocatello, Idaho, after checking up with a couple of the oldest men at Pocatello and a boomer switchman, I. L. Donaldson. as follows:

. "In the early days here, there was a personal record clerk, name unknown to me, who, for a small consideration, would enter on a man's service letter the statement that he had served as night yardmaster at Pocatello. As years went by, switchmen by the carload came and went, so it wouldn't have taken long to flood the country with so-called Pocatello yardmasters.

"A W. I. Illingworth, who is now general road foreman of engines here, told me that this gag was going the rounds at least as early as 1901, when he started firing. I remember one night overseas in a French grog shop in 1918, I chatted with an American soldier who claimed to have worked on 22 different roads in U.S. and Canada. When I told him I lived at Pocatello he wanted to know if I had ever been night yardmaster there. So I guess that story has been around the world."

* * *

WHO can beat the record of A. C. Wiggs, Mapleton, Iowa, employed on the same section of the Chicago & North Western at Mapleton for 47 years? Wiggs began as section laborer May 1st, 1891, the year of a big flood in that area; was promoted to foreman April 10th, 1899, and was "given the rocking-chair" (retired) June 1st, 1938. During that long period the section was changed in length five times, from 6 to 17 miles.

Mr. Wiggs faithfully kept a record of all the men who had worked for him during his 38 years as section boss, and still has their names, also the names of nine roadmasters he served and information on 73 washouts.

EIGHT-WHEELER built by William Mason for the Boston, Lowell & Nashua (now Boston & Maine)

Photo from Railroadians of America

TRAIN ORDER HOOPS. A. L. Foster told us *(April issue)* that in 1904, on the Rock Island, long before hoops became standard equipment for operators, he used barrel hoops to deliver train orders. And last month Elmer E. Miller recalled that in 1896, when he was working at RK tower on the Pennsy, near Middletown, Pa., they used a short stick, split at the end, into which the message was inserted and secured by rubber bands—until Elmer devised a new method, namely, making hoops with grapevines.

We learn from Clarence Pruton, Jacksonville, Ill., that the CNO&TP (now Southern) had order hoops as far back as 1900. And M. W. Flynt, Maine Central op, 5 Hillcrest St., Waterville, Maine, says that as early as 1896 he saw his father pass messages up to moving trains with barrel hoops, also by the simple method of tieing the message on one end of a string and a lead car seal on the other, the conductor catching the middle of the string over his outstretched arm.

"Hoops of the same pattern as those in use today came into service on the Erie's Marion Division in 1900 or 1901," relates T. C. Haigh, Venedocia, Ohio. "The handle was 24 to 30 inches long and was supposed to be pushed into the metal furl on the end of a staff about five feet long when the order was to be handed up to an engineman in the cab window, so that the operator would not have to stand too close to the train. However, the brakeman or fireman usually would come down on the engine-tank steps to grab the hoop, so the long staff was seldom used. Most engineers would reduce speed to facilitate grabbing the hoop.

"Engines of that period were generally fired from the platform deck. Later, when locomotives with elevated decks came into service, the brakeman or fireman would often lay down on the deck floor to get the hoop so as to avoid the danger of falling from the steps. The block signal was displayed at *proceed* and the op was supposed to use a green flag or lantern to signal the train for the order. Later a yellow flag or lantern was adopted for this purpose.

"The *19* order was not used to restrict a train's rights and no clearance card was utilized in delivering it to the crew. Should the crew fail to get it, they could keep going, and no harm except delay could come to them on account of the miss. I believe some ca-

UNION PACIFIC No. 117 with mixed local on Stapleton branch; snapped by Francis Gschwind, RFD 3, Callaway, Neb.

boose crews missed more of these orders than they received, because they were too lazy to come out for orders when passing telegraph offices."

Mr. Haigh is of the opinion that order hoops came into use on the Clover Leaf (now Nickel Plate) at about the same time they first showed up on the Erie.

"Usually hoops were thrown back to operators after the orders had been removed," he continues, "but sometimes they were kept by the caboose crew, who tossed out extra hoops in place of those they retained. Most roads required the op to display the block signal at *stop* and signal the train to proceed with a green or yellow signal in delivering this form of order. In such cases the op was obliged to hand up a clearance card with his orders.

"Many roads permit the use of *19* orders in restricting the rights of trains; but this, to my way of thinking, is very bad practice. In case the crew overlooks an order, both op and dispatcher would be left with little protection should the crew deny having received it."

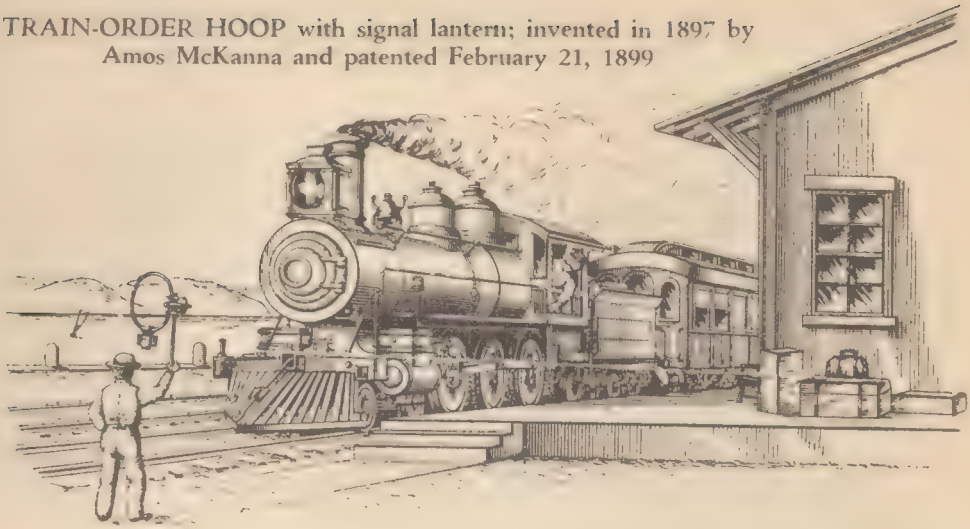
F. T. Gustafson, agent-telegrapher for the Milwaukee Road at Kimball, S.D., throws additional light on the subject. Mr. Gustafson started railroading in 1902 at the age of 16. His father, a station agent who retired five or six years ago, is now living in Spokane, Wash., at age 92. The son writes:

"The first order hoop I ever saw or used was a plain round hoop about 15 inches in diameter, with no stem or handle. That was about the year 1908 when I was a night operator on the Illinois Central, Dubuque Division. Perhaps some old-timer can inform us when the IC first used these hoops."

Some nights Gustafson delivered the orders from hand to hand, when he was out of hoops or did not have time to search for them.

"About the year 1903, when I was working nights on the CM&StP, Chicago & Council Bluffs Division," he recalls, "I had my first experience delivering permissive cards, hand to hand, by the dim light of a kerosene bug. Under such conditions, 15 to 25 miles per hour seemed plenty fast to me, but in time I became used to it, and while working on daylight jobs I often delivered permissive cards to trains moving at 40 or more mph. I have seen my father hand up these cards to train after train when there

TRAIN-ORDER HOOP with signal lantern; invented in 1897 by Amos McKanna and patented February 21, 1899



were 20 or more sections of a designated train."

D.C. Page, Grand Trunk Western operator, Lowell, Mich., points out that the train-order signal pictured on our April cover does not agree with the photo on page 16, same issue. "All signals of this type that I know of," he writes, "are on the right side of the pole in respect to an approaching train. Does any North American road have it on the left?" The answer is: Yes, several, including the Norfolk & Western.

* * *

JOSSERAND'S "Mountain Dispatcher" *(April issue)* brought back to Elmer Graff, 1317 Grand Ave., Madison, Ill., memories of his own experiences in Feather River Canyon while working there in an extra gang.

"Trains often passed by camps where we were located," he says, "and hogheads would hold out the palms of their hands in the manner of a fisherman telling a whopper, asking the gandy dancers in sign language how far the last train was running ahead of them, as the engineman had no other way of knowing this information in the absence of block signals or other safety devices.

"We trackmen dreaded going to bed on a rainy night, especially if the rain was heavy, as we feared the mountain might go on a rampage. In the fall of 1937 we were camped at Belden on a track below the station located under the railing pictured in April issue, page 16. Rain had been pouring all night. At about 4 a.m. we received a call to be prepared to be picked up by an extra very soon, as No. 2, the eastbound *Scenic Limited*, had run into a slide at tunnel 9, west of Pulga, Calif. We summoned the coroner and his assistant and proceeded to the scene of the accident.

"When our train arrived there, we found that the engine of the Limited had hit a rock slide shortly after emerging from the tunnel. Both engine and baggage car had rolled about 300 feet down the mountain, killing the engineer and fireman. We formed a human chain and thus transferred mail and express from the baggage car to the right-of-way.

"Picking the wreck up was quite a job for the big hook, many cables breaking under the strain. It was finally gotten up with the help of a lidgerwood. We combed down the rocks from bottom to top seeking the fireman's body, but found no trace of it. So far as I know, the body never came to light. An inspection of the engine disclosed that the engineer had done all he could to avert the accident, as the brake handles were in a position to stop the train."

Elmer tells us that the Western Pacific engine pictured on our April cover figured in an experience he had while flagging for an extra gang.

"At that time," he narrates, "not even a motorcar could be moved except on a train order or under flag protection. Our camp was located below Belden station and we were raising track east of there. One morn-

Local Railroad Photographic Club, 7 Laurel St., Allston, Mass.

JOURNEY'S END. ***The Dominion***, Canadian Pacific express pulled by semi-streamlined Hudson-type engine No. 2826, is seen arriving at Windsor station in Montreal after burnishing 2883 miles of rails across the continent from Vancouver, British Columbia

ing a train passed while we were eating breakfast. Looking through the windows of our diner I noticed it consisted of empty reefers with about two loads of merchandise. I didn't think it was No. 61 running extra, as 61 usually carried more merchandise.

"After breakfast I received a line-up saying that engine 255, the one shown in Blakeslee's painting, running extra, would leave Keddie about 9:30 a.m. The foreman ordered me to take my flagging equipment and go east, let *Extra 255* by without flagging but stop everything behind him and inform the engineer that the track was unsafe. So I walked about three miles to what I considered a safe flagging distance and waited.

"For about two hours nothing showed up. I wondered what I should do if *Extra 255* fell down on her schedule and the local should run ahead of her. Due to my inexperience, I decided that if the local should run first I would let it pass without flagging but would stop every train after that. Well, near dinner time the local roared by at a fast clip. I waved at the engineer; but he probably didn't see me, as I had no torpedoes down to attract attention.

"After the local was gone, I placed two torpedoes about two rail-lengths apart and started hiking back toward the gang and dinner, meanwhile holding a torpedo in my hand in readiness to clamp to the rail if a train should show up. Coming to a tunnel, I lit a fusee and stuck it in a tie to protect me and give me a chance to stop any train that might come along.

"Soon I came to the local's flagman, seated on a rock. He asked, 'Where were you when we passed?' and said the train had 'dynamited' and a drawbar was missing from an old-time Rogers ballast car which had to be set out at Belden. The local had been flagged by a member of the extra gang coming to pick me up on a motorcar and had narrowly missed hitting the whole gang. I had to make a report of it, but I wasn't discharged, as *Extra 255* had passed our camp with those reefers while we were eating breakfast.

"Flagging for an extra gang was a ticklish job at times, as you were always going against the train and the only thing you could do when one came upon you was drop a torpedo on the rail, in which case the hoghead usually ran by you. When you ran down to the engine he generally gave you a bawling out. In foggy weather the job is especially tricky. An interesting story might be written about the track walkers who tramp the length of Feather River Canyon in all kinds of weather, night after night, looking for slides and washouts."

* * *

"BACK in 1892 I started railroading for the Santa Fe at Dallas City, Ill.," reminisces C. E. Simpson, 510 E. Front St., Bloomington, Ill. "I retired four years ago."

Mr. Simpson relates an event that still gives him a laugh. It occurred about 1910, when he was an agent on the Chicago & Alton at Washburn, Ill.

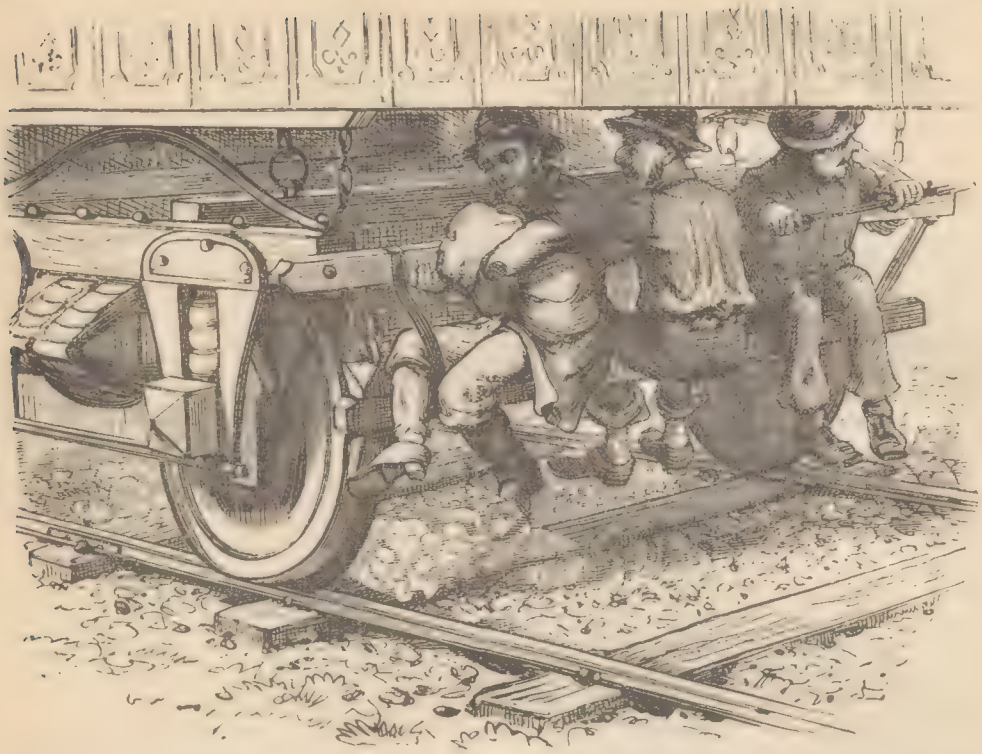
"We started work at 7 a.m.," he says, "and got 'GN' (good night) at almost any time in the evening. Bill Walton, who was trainmaster on the Katy at Denison, Texas, described the situation as '24 hours and hurry back.' Well, at 9 p.m. one Saturday a train arrived from Chicago and unloaded a truck full of express. When it pulled out I ran the truck into the freight house and, being tired, closed up and went home.

"Next morning I started unloading and checking the express matter off the truck. I found a carton about two feet high, also a hog in a crate. While I was busily engaged, the hog became restless, chewed and pushed his way out of the crate, falling off the truck head-first into the carton, knocking it over and escaping into the room. As he scrambled out of the crate, he carried along a lot of fine, dirty, wet straw, which fell into the carton—containing a lady's hat.

"It made quite a mess. I spent a full hour picking the filthy straw from the carton and putting the hat into a fairly presentable condition. Later I delivered the hat to the consignee. Luckily, there was no complaint. I can still see that pig jumping into the carton! How I managed to get him back into the crate, I do not recall."

* * *

"BACK in 1873, when I started firing on the Canadian Southern (now New York Central) we had to work for low wages and do our own cleaning of brass bands that covered the boiler—but those conditions were changed by the big strike of 1877," recalls John J. Fidler, retired locomotive and steam-shovel engineer, 699 Royal Ave., Calgary, Alta., Canada.



Old print from Leslie's Illustrated Weekly

RIDING THE BRAKE-BEAM—one way to see the Union Pacific seventy years ago

"I was cleaning the engine I was firing," he writes, "when the first lubricator was put on the locomotive next to ours. This was installed on the steam chest, but was considered a failure. The engineer who went out with that lubricator met death because he passed a flag while trying to get tallow out of the cylinder."

Fidler's first run as engineer was delivering two locomotives, one built by Hinkley, the other by Grant, to the South Shore. Then he delivered two more to the Scotia Valley, an Ohio coal road. Later he worked for the Wabash, then Chicago Great Western.

"Forty-eight hours after I had landed a job running between Milwaukee and Green Bay, Wis.," he continues, "I had a collision which laid me up. When I got back on my feet in 1883, I hired out to the Canadian Pacific at Swift Current, Sask. The master mechanic there was A. F. Preist, under whom I had worked on the CGW. He was hiring lots of men—couldn't keep them long because Saskatchewan winters are so cold. After a while I got tired of that country myself. I worked five years on the Great Northern, then on the Northern Pacific. But now, in my 84th year, my railroading days are over."

* * *

CORRECTION. *Annual Speed Survey* by Donald M. Steffee *(March issue),* listing North American start-to-stop runs of 60 mph or faster, should have included the Espee's *Daylights* between Los Angeles and San Francisco, according to data supplied by P. Schneider, San Jose, Calif., who points out that these trains stop regularly at Santa Marguerita, Calif., to attach or detach the helper engine used over the Cuesta grade to the south thereof. The operating timecard reveals that the 117.3 miles between Santa Marguerita and Salina is covered in 116 minutes (60.7 mph) by No. 99 northbound and in 117 minutes (60.2 mph) by No. 98 southbound. These two fine runs—234 miles in all—should be added to the totals.

Reading Railway map in May issue should have included the branch to Chester, Pa., corrects Raymond Miller, Philadelphia, Pa.

Mallet photo in June issue, page 127, was really taken by John Beck, 50-52 68th Ave.,

Photo by David McQueen, 132 South Drive, Ft. Garry, Winnipeg, Man., Canada

TRAIN 121, engine 2642, on Winnipeg-Deloraine branch of CPR

Brooklyn 27, N. Y., and shows N&W No. 2158—*not* Keith Buchanan's shot of NYC Mallet which our caption indicated. Cuts and captions were transposed in printing.

Photo of SP 2244 *(April)* was taken by Ralph Knight, Hayward, Calif. Negative now belongs to David L. Joslyn, who supplied the print we used.

* * *

SEVEN years since his last previous letter to *Railroad Magazine,* Sgt. Robert C. Lingwood, R. C., 1582553, No. 31 P Depot, Moncton, New Brunswick, writes to tell us that he is now a furloughed fireman of the LMS (England) in the RAF and recently took a specialized course on this side of the Big Pond.

"Best of all," he states, "I met a Canadian girl named Jess Ricard, who is also interested in railways. Together we have built up a good collection of railphotos. My home address is 15 Skilbeck St., Leeds 12, England."

* * *

INFORMATION about Iowa's narrow-gage roads is wanted by William E. Story, 722 Hawaii St., Honolulu 3, Hawaii, who writes: "An old-timer named Jack Knightlinger of the Chicago & North Western at Mason City, Iowa, in 1904 told of chaining standard- and narrow-gage cars together on a pike having three rails for several miles, and spoke of running over the tops to tie down brakes on that kind of mixed train. Who can supply details?"

"TROOP TRAIN which I saw recently, said to have been filled with German prisoners, passed through Worcester, Mass., over the Boston & Maine," asserts Harold I. Judkins, Jr., Rutland, Mass. "The train had a B&M engine and cars from these roads: two Illinois Central baggage cars, two Atlantic Coast Line coaches, two Pullmans and one coach apiece from the NYO&W, Central of Georgia and New Haven, plus two unidentified coaches."

* * *

STRAW VOTE. As you know, our readers indicate which stories, articles, etc., they like best. Some clip the Reader's Choice coupon *(page 138);* others write their preference on cards or letters. Here is the May popularity list, based on votes received:

1. True Tales of the Rails
2. Largest Anthracite Carrier, *Hubbard*
3. Burning Brakes, *Dellinger*
4. Electric Lines, *Maguire*
5. Railroad Jim *(Part 2), Daugherty*
6. Light of the Lantern
7. On the Spot
8. Locomotive of the Month
9. 100,000 Horsepower, *Nejedly*
10. Railroad Camera Club
11. Locomotives of Reading Company
12. Along the Iron Pike, *Easley*

Most popular photo in May issue showed the Reading *Crusader,* page 36, followed by pictures of NC&StL express, 19; the P&R train on "Little Horseshoe Curve," 30, and NYC engine, 75.

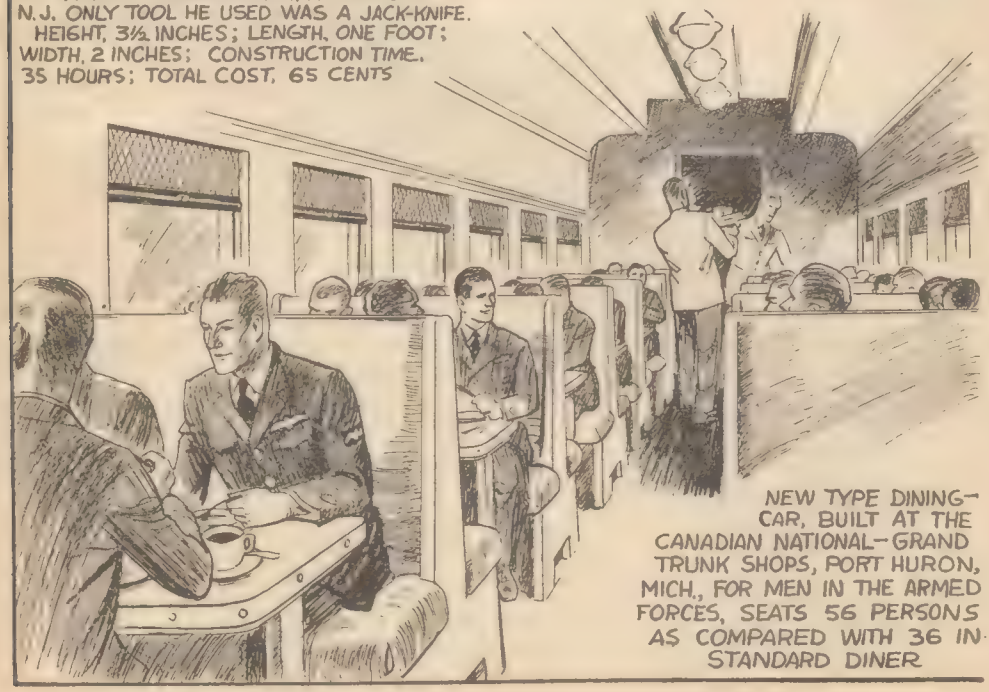
COMING IN SEPTEMBER—Illustrated feature: "Norfolk & Western"

ALONG THE IRON PIKE

by JOE EASLEY

MANY D&RGW RAILROADERS AND THEIR FAMILIES LIVE IN THIS TRAILER CAMP OF 50 UNITS AT HELPER, UTAH, BECAUSE OF HOUSING SHORTAGE. SIMILAR COLONY IS LOCATED AT MINTURN, COLO.

MODEL CARVED ENTIRELY OF WOOD (EXCEPT FOR STAINLESS STEEL HAND-RAILS, SAND PIPES AND INJECTOR PIPES) BY ELDRED BERNHARD, 37 S. NORTH CAROLINA AVE., ATLANTIC CITY, N. J. ONLY TOOL HE USED WAS A JACK-KNIFE. HEIGHT, 3½ INCHES; LENGTH, ONE FOOT; WIDTH, 2 INCHES; CONSTRUCTION TIME, 35 HOURS; TOTAL COST, 65 CENTS



NEW TYPE DINING-CAR, BUILT AT THE CANADIAN NATIONAL-GRAND TRUNK SHOPS, PORT HURON, MICH., FOR MEN IN THE ARMED FORCES, SEATS 56 PERSONS AS COMPARED WITH 36 IN STANDARD DINER

ONLY MODEL EVER BUILT OF U.S. ARMY HOSPITAL WARD CAR, SO FAR AS WE KNOW, WAS FASHIONED BY JAMES S. YOUNG, 109 S. FULTON AVE., MT. VERNON, N.Y., TO AID WAR BOND AND RED CROSS DRIVES. THE ¼-INCH SCALE REPLICA WAS MADE IN 19 HOURS

UNIQUE FAMILY RECORD. GARRARD D. SMOCK (SHOWN HERE) AND 3 SONS - GEORGE H., VIRGIL O. AND GARRARD W. - ALL WORKED IN PULLMAN SERVICE ON THE SAME TRAIN, SOUTHERN PACIFIC "LARK," BETWEEN LOS ANGELES AND OAKLAND, CALIF., ONE DAY IN 1941. G.D. SMOCK'S FATHER, DECEASED, HAD 23 YEARS OF PULLMAN CO. SENIORITY

(From Hal D Cooper, Los Angeles)

EXTRA TENDER LESSENS THE NUMBER OF WATER STOPS, THUS SAVING FUEL AND TIME. READING RAILWAY COUPLES 10,000-GALLON AUXILIARY WATER TENDERS TO CLASS I-10 ENGINES RUNNING BETWEEN ERIE AVE., PHILADELPHIA, AND TAMAQUA AND RUTHERFORD, PA.

WHITE COAL-POWERED Milwaukee OLYMPIAN glides through Montana Canyon. Two hundred and eighty-eight ton motor uses 3,000 volt direct current

Electric Lines

Conducted by STEPHEN MAGUIRE

EMPLOYE-OWNED car 303, formerly of **Greenfield & Montague line in Massachusetts, speeds out of Sydney, Nova Scotia, enroute to Glace Bay**

Cape Breton Tramways

IN NOVA SCOTIA, land of Longfellow's "Evangeline," is the most eastern interurban line in all North America. Operating as the Cape Breton Tramways, Ltd., it connects the coal mining towns of Sydney and Glace Bay in its 21 miles of track. Service is provided on hourly schedule by four steel cars bought in 1934 from the defunct Greenfield & Montague (Mass.) Transportation Area line. These cars operate at speeds up to 45 miles per hour, making the run in one hour and ten minutes. Three cars are in use regularly, with extra cars during rush hours.

Going east from Sydney, the line runs straight to Reserve Jct., where it starts on a wide loop twice as long as the Sydney-Reserve Jct. run. While rounding the loop, the cars pass through several mining towns and through Glace Bay, the town where Marconi sent the first radio message across the Atlantic Ocean. Each car runs from Sydney to Reserve Jct., then counter-clockwise around the big loop, rattling through Glace Bay, New Aberdeen, Bridgeport and

Reserve Mines to Reserve Jct., where it stops and goes back along the same route, passing through Glace Bay again, and on to Sydney. All three cars meet at Reserve Jct. at the same time and connections are made there.

Between Sydney and Reserve Jct. the track is on private right-of-way, but on the loop through Glace Bay it is partly on right-of-way, partly on city streets, and partly along the side of the roads. Freight service is interchanged with steam lines, and motor No. 1 handles all the freight work. Small packages and newspapers are carried by regular passenger cars.

This line was incorporated March 30th, 1900, as the Cape Breton Electric Tramway & Power—a name that was changed to Cape Breton Electric Co. when construction was begun in April, 1901. Service started in 1902. There were seven miles of track in Sydney, also six miles in North Sydney, across the Harbor from Sydney.

CAPE BRETON equipment includes: (above) sweeper, No. 2; (left) tripper car, 108, with 40 years' seniority; and (next page) the line's only freight motor, shown switching a CNR boxcar in Sydney

Also in 1902, a company was incorporated to build from Sydney east through Glace Bay, this being the Sydney & Glace Bay Ry. The new line was completed and opened in October, 1902. Cars ran on Cape Breton Electric trackage in Sydney streets and on their own rail for the rest of the trip to Reserve Jct. and Glace Bay.

Both companies joined in 1908 and prospered until the automobile entered the picture. Then diminishing profits caused the North Sydney-Sydney Mines line to be abandoned in 1926. In 1929 the Eastern Light & Power took over operation but could not make it pay, hence we find liquidation proceedings begun in 1931.

To salvage as much as was possible, a group of Glace Bay Division employes formed the Cape Breton Tramways, Ltd., and bought out the Sydney-Glace Bay line. The two local routes in Sydney were then abandoned, leaving only the 21 miles of interurban that remain today.

The new company, owned and operated by employes, tried hard to make expenses and succeeded so well that by 1934 they were able to purchase the four modern cars we have mentioned, as partial replacement of the older wooden interurbans. These four, equipped with air whistles and painted a bright yellow color, burnish the rails at 40 to 50 miles per hour.

Following is an all-time equipment roster of the Cape Breton Tramways, showing numbers, types, year built, builder and disposition:

Passenger cars: 1-11, single-truck passenger, 1902, Ottawa, all scrapped except No. 3, used as line car; 51-52, single-truck Birney, 1917, St. Louis, No. 52 scrapped; 53-61, single-truck Birney, 1917, Brill, five sold to Halifax, rest scrapped; 101-108, double-truck passenger, 1902, Ottawa, all scrapped, except 107 and 108; 201-203, double-truck passenger, 1917, Cincinnati, bought second-hand, all scrapped; 301-304

double-truck passenger, 1929, Wason, bought from Greenfield & Montague Trans. in 1934.

Freight: 1, double-truck motor, 1904, Rhodes, Curry & Co., in service; 2, double-truck trailer, 1904, Rhodes, Curry & Co., scrapped.

Work cars: 1, single-truck sweeper, 1903, McGuire-Cummings, in service; 2, single-truck sweeper, 1920, McGuire-Cummings, in service; 3, single-truck line car, 1902, Ottawa, former pass. car No. 3; 51, double-truck plow, 1902, Brill, in service; 52, double-truck plow, 1911, Worcester, in service; 53, double-truck plow, 1912, Cape Breton Elec., scrapped.

All of the foregoing Cape Breton material, including the photos, comes from Stanley Borden, 231 Liberty St., Petaluma, Calif. Stanley used to live in Halifax, N. S.

Car-Barn Chatter

Steve Maguire

AN INTERNATIONAL angle was given to the juicefan trip over the remaining lines of the City Railway Co., Dayton, Ohio, when it was discovered that a Royal Air Force sergeant in a passing auto had stopped and gotten out to photograph the special trolley carrying members of the Dayton Car Riders Association.

A group of fans in Dayton had decided that "Old Barney" (technically known as car No. 72) had been in retirement too long. So they approached the City Railway management, which permitted them to take the car out for its first run since 1939. While the group were riding the two remaining streetcar lines at Dayton in 40-year-old Old Barney, they discovered that the RAF officer had joined them and was taking pictures. Upon asking questions, they learned that he was a member of the Light Railway Transport League, the British juicefan organization affiliated with the ERA. He had seen a notice of the trip in a newspaper and, with his girl friend from Troy, Ohio, had searched the streets of Dayton until he discovered the trolley.

H. J. Day, 17 N. Smithville, Dayton 3, O., writes that all 25 occupants of the car had a swell time. The local newspaper devoted two full pages to pictures of the ride.

* * *

FANTRIP of about 4 hours on PSNJ, Hudson County Div., starts Sunday, June 18, 1:10 p.m., at Hudson Place Terminal (Lackawanna station). Sponsor, ERA, N. Y. Div. Fare, $1.50. Admission to car by ticket only. Limited number of tickets issued. Ticket mailed or reserved only on receipt of $1.50 by Herman Rinke, treas., 224 E. 48th St., New York City 17.

* * *

FROM ITALY, where he is stationed with the armed forces, Sgt. Roger Borrup, member of the Southern New England Chapter, National Railway Historical Society, sent us an interesting shot of a trolley he had ridden while in Tunis, Africa *(see page 131)*, with these comments:

"The tramway system there is meter-gage, while the suburban rapid transit line running to Carthage and the beach resort of La Marsa is standard. Tramcars are four-wheelers, painted white, and dinkey even in comparison with American Birneys."

Your Wartime Vacation Cruise

The world is yours—the exciting, colorful world of romance and adventure—in the pages of July ARGOSY. Here you'll find the relaxation and change you need, without benefit of priorities or fear of slighting your essential job. . . . Go South to Florida with Philip Wylie—on a salt-water fishing trip where the prize catch was a lovely girl. Ship out to dangerous waters with Robert Carse. Take time off for the enchantment and dashing adventure of spy-ridden Algiers, under the guidance of Robert Wallace—or an entertaining episode in the war-time career of a prize-fighter, William Fay's latest story.

Among the outstanding stories and articles to be found in the big July issue of ARGOSY are:

FICTION

North African Hayride, a book-length novel of espionage in the wake of invasion amid the olive groves of Algiers. Written by Robert Wallace.

Beauty and the Poor Fish, Philip Wylie's latest story of Florida fishing—and a double-baited problem in morals.

Man Stuff, a dramatic study in a thirteen-year-old boy's loyalty and courage when his family's matrimonial ship piles up on the rocks.

My Pal The Champ, a William Fay tale of the characters, lovable and otherwise, who make the prize ring a clearing house for twisted human emotions.

FACT

Robert Carse, in "Safe Convoy," gives a gripping account of the day and night watch that is seeing our troopships through to England.

Erika Mann answers a question that looms large on the world horizon: "Can Europe Be Democratic?"

David Seabury—an article on the jitters that are besetting us here in America today.

Edward Wilkes, M.D., gives advice you'll want to follow on your trip to the beach, in an article entitled "Summer Bliss or Blisters?"

ARGOSY

25c

Many other memorable stories and articles, by other leading writers, may be found in July ARGOSY—on sale June 9.

Sergeant Borrup tells us there are tramway systems in Oran, Algiers and Tunis. The latter two also have suburban electric lines, while the town of Ferryville has a gas-motorized horsecar tramway running down the streets. The sergeant's mailing address is care of 12th Weather Squadron, APO 650. New York, N. Y.

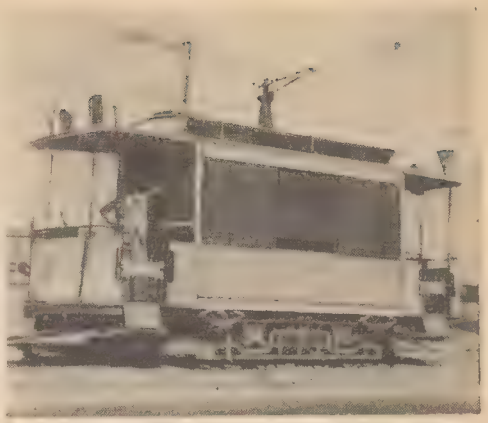
* * *

WHEN we inquired, "What car is this?" under a small photo of a snowbound trolley carrying the number 304, in the March issue, we didn't think there was much chance of anyone identifying it for Ed Frank, Jr., who had asked us to publish the picture. Much to our surprise, Charles O. Van Wyck, 90 Swanson Parkway, Portsmouth, Va., pulled the needle out of the haystack. Charlie, who used to be a conductor on the Grand Rapids (Mich.) Street Ry., recognized the car as one which operated in that city and the location as Scribner Avenue, N.E., south of Bridge Street.

"This type car was one of five or six that were built especially for the line called Hill Run," he explains. "They had magnetic brakes as well as hand brakes, and the old parallel side seats. You can see the oil tail light in the photo, to the left of the trolley retriever. I've snatched many a nickel on this model between 1918 and 1920."

* * *

FONDA, JOHNSTOWN & GLOVERSVILLE, an interurban of central New York State, was featured in the May issue of *The Marker*, publication of the North Jersey Chapter of NRHS. Written by Robert Bedford of Johnstown, N. Y., this article carries some fine illustrations, besides the line's complete history. Copies of the issue may be secured at 20 cents each from Matthew Vos-



VENETIAN blinds are used on city cars of Tunis Tramways in tropical Africa

seller, 912 South Ave.. Plainfield, N. J.

Matt also has copies of several earlier *Marker* issues on hand for sale at the same price. These include illustrated histories of the Jersey Central Traction, the Atlantic Coast Electric, the New Jersey Interurban, the Allentown & Reading Traction and the Public Service White Line. He says remittances may be made in dimes or postage stamps for as long as the supply lasts.

* * *

TROLLEY ROADS in Lebanon and Lancaster Counties is the title of a 31-page illustrated booklet just published by the author, Harry D. Lentz, who was a conductor for the Ephrata & Lebanon Traction Co. This brochure presents much interesting history and source material covering that not-too-well-known line in Pennsylvania, also histories of the Conestoga Traction Co., the Lancaster & York Furance and the Lancaster & Southern Street Rys. Copies may be obtained by sending a 50-cent money order to Lentz at Lebanon, Pa.

Ever hear of a church used as a car barn? No? Harry tells us of such a case in the little town of Jersey Shore, Pa. It seems that when the Jersey Shore & Antes Fort Railroad, a trolley line, was being built, there was need for a car barn. Since the route was to be only 2.75 miles, connecting the towns named, promoters agreed that a small building would easily suffice. Looking around, they came upon an old, deserted church having a tall steeple and

Photo by Stephen D. Maguire

FJ&G STREAMLINER at Schenectady Plaza in 1938, **before service was abandoned**

churchyard, bought this and converted it into a car house.

An opening was made in front and rear, just wide enough to lay a single track clear through the edifice and into the churchyard where it continued far enough to accommodate two cars. The company bought four cars, but two of them were the limit that could be stored inside the church—or was it a car barn? Eventually, in 1926, the JS&AF was driven out of business by the autos and trucks. Does any reader know of another church edifice put to such a use?

* * *

"THE TRUE California open car had the closed section at one end of the car and open section in other end," advises Cpl. Ira Swett, ASTU, University of Washington, Seattle, Wash. According to Corporal Swett, who is editor of *Interurban News Letter,* many so-called California-type cars had open ends with closed center. Strictly speaking, these were not true California cars.

We want to hear from readers who have opinions on this subject. Recently someone sent us a photo of a San Francisco trolley with closed ends and open center portion. How can this type be classified?

MORE PCC CARS. British Columbia Electric in Canada, has received seventeen more PCC streamliners for use on its Vancouver lines. This brings to twenty-one the total PCC's on BCER. All were built by Canadian Car & Foundry of Montreal.

Montreal saw its first PCC car early in March. Painted cream with red striping, the newcomer is the first in an order of thirty of these fine trolleys, which in test runs has attracted much attention on the city streets. And no wonder! Wherever equipment this type operates it meets with public favor.

R. G. Harris of Asbestos, Que. Canada, sends us a clipping with a large photo of this car prominently displayed on the front page of the *Montreal Daily Star.* Evidently the citizenry of that community are in for a treat in the form of the best kind of municipal transportation yet discovered.

* * *

"TROLLEY CARS are a lot of bunk," writes Cpl. Robert E. Folsom, 687th Band, Newport Army Air Base, Newport, Ark. "Throw them out of *Railroad Magazine.* Who cares for old, broken-down streetcars? Hell, I can see them any time, but I can't always see a good railroad engine Forget

Photo by a member of the National Railway Historical Society

COMBINE NUMBER 31 of the Lancaster, Ephrata & Lebanon Traction Company poses for her picture at Ephrata, in "Pennsylvania Dutch" country. This line is among those mentioned by Harry D. Lentz, erstwhile conductor on the LE&L, in his new illustrated brochure, ***Trolley Roads in Lebanon and Lancaster Counties.***

(See page 131)

Photo by T. Scholey, 2605 N. Main St., Dayton 5, Ohio

OLD BARNEY of City Railway makes a special run for Dayton, Ohio, Car Riders Association. Fans mill around No. 72 as she stands on loop at Soldiers' Home. Only two car lines now operate in Dayton

city transit lines and stick to railroading."

Cpl. Folsom, who is a furloughed Pennsy fireman, Cincinnati Division, would like to hear from Pennsy men everywhere. He wants this magazine to go heavy on Pennsy stuff and fiction stories. Railroad lingo, he says, gets on his nerves. So do facts and figures, except in small doses. The corporal is right in stating his preferences; but he is not fair to other readers in expecting us to eliminate certain material which many persons enjoy, merely because he himself does not care for it.

Suppose B&O men protest against PRR shots? Suppose grayheads demand that we drop all present-day stuff? Suppose young fellows ask us to embargo all old-time stories and pictures? Suppose one group tells us to throw out the *Lantern* department, and another clique takes a stand against *Locomotive of the Month*, and a third tries to get rid of the *True Tales*. The upshot of the whole matter would be a magazine of 146 blank pages!

We now hear from K 65922, Gnr. Gidney N.F., No. 1, A.A. Brigade H2, Canadian Army Overseas. Gidney hails from Vancouver, B.C., is a streetcar and interurban fan, and continues to enjoy *Railroad Magazine* overseas because a friend sent him a subscription.

"It certainly is a boon to get the old stand-by," he writes, "and to read of the rail activities back home, after leaving them all behind for the duration."

Sgt. W. Kral, 508480, M.P.O. 705, RAF Depot 31, Moncton, New Brunswick, mentions a rather unique railroad station built under a river. This novelty is located in England on the district Railway, part of the London Transport Board's underground system, at Sloan Square. Fleet River, one of London's "lost" rivers, is carried over the station and tracks in a steel tube.

* * *

TROLLEYS IN POLAND. Before the war, you had to change trolleys three times at the Polish-German border, in order to cross it, recalls Herbert Wassertheil, 130 W. 86th St., New York City, who used to live in Upper Silesia and arrived in this country in February, 1941.

Herbert writes: "The trolley cars in our city, Katowitz, were very modern. Painted a cream-yellow color, they had pantagraphs that looked like those on the Pennsylvania

SHE CAN PULL 12 passenger cars with ease. The "juice jack" was built by F. F. Gillard, 202 Decatur St., Lincoln, Ill., and his son Meloin. For 32 years Mr. Gillard was employed by the Illinois Terminal Railroad as agent, sub-station op, sub-maintainer and lineman. Plans appeared in Jan., '42, *Railroad Magazine*

Railroad. We had suburban and interurban lines, with trailers on the longer runs.

"Katowitz is located near the Polish-German frontier, and I crossed quite often. Although the trolley line ran across the border, passengers had to change three times to get over it. Upon reaching the town of Lagievniki, Poland, all passengers had to leave the car and show their passports to Polish border guards. Then they passed ahead into a "no man's land" and boarded another trolley on the same line. The first car couldn't go any further; there was a fence across the tracks.

"After riding about a hundred yards on the second car, you came to a stop in front of a pile of sand on the tracks. Passengers alighted and took a third car. This carried them a short distance to the German inspection house, where Nazi border guards inspected the passports. Finally, after passing into Reich territory, you boarded a fourth trolley for the rest of the journey to Beuten, Germany."

* * *

QUIZ ANSWER. Last month, you remember, we raised the question of the most recent total abandonment of a juice railway line, despite the increased need for such operation resulting from the Pearl Harbor attack. There are at least three possible replies to this query, depending upon certain technicalities, and all three are right.

Most of you probably thought back to passenger lines; and if you did, omitting the "freight only" companies, the answer is: *Bakersfield & Kern Electric Ry. in California, abandoned February 28th, 1942.* No electric passenger lines have been abandoned altogether since that date, but a couple of "freight only" juice pikes quit.

Technically, the Indiana Railroad was the latest total abandonment. You may recall that a couple of short freight remnants continued to operate after the passenger service quit in 1941. These were stretches at Terre Haute and Speeds, Ind.; but the segment at Speeds was reorganized and is today the Southern Indiana Ry., no longer connected with the former corporation.

Indiana Railroad operation, last of that company under its original name, ended in April, 1943. So this answer also would be true. But if you feel somehow that we have tricked you in selecting the Indiana, since cars still use part of that old line at Speeds under a new name, you may state with authority that the Nashville-Franklin Ry. was the most recent juice line to be fully abandoned. The latter stopped running freight between the two Tennessee towns on March 6th, 1942.

It all boils down to this: If you cited the Bakersfield & Kern, the Indiana or the Nashville-Franklin, you were right.

* * *

FINAL American streetcar route to quit before the ODT "freezing" order effective April 1st, 1942, was in Brooklyn, N. Y., the Hamilton Avenue route of Brooklyn & Queens Transit, which Mayor "Make-'em-ride-busses" LaGuardia of New York City barely managed to get under the wire on March 29th, 1942.

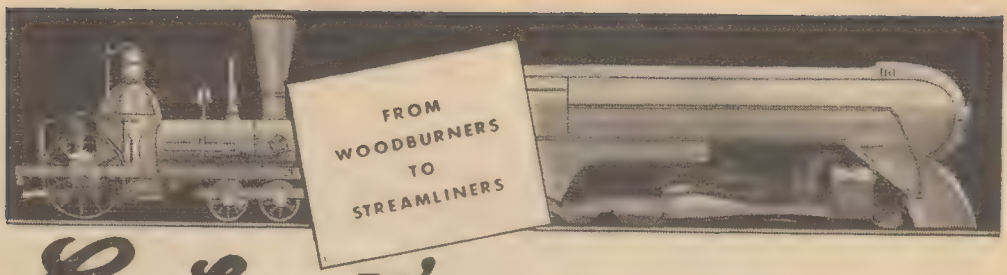


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Photo from George M. Hart, George School P. O., Pa.

FIRST BRIDGE at Neshaminy Falls, Pa., on Delaware River branch of the North Pennsylvania Railroad (now Reading)

Railbooks

Jay V. Hare

TWO BOOKLETS dealing with predecessor lines of the Reading Company have just come to our desk. Both are packed with information and dependable reference material; but neither, we regret to add, is illustrated, even with a map.

One of these, *History of the North Pennsylvania Railroad* (31 pages, 8x11 inches), by Jay V. Hare, Secretary and Treasurer, Reading Company, is being distributed free, as long as the supply lasts, only one copy to an applicant. Anyone desiring a copy may write to the company's Publicity Department, Room 419, Reading Terminal, Philadelphia 1, Pa.

The other booklet, *History of the Lebanon Valley Railroad* (102 pages, 6x9 inches), by Ralph S. Shay, is obtainable at a dollar per copy from the Lebanon County Historical Society, Lebanon, Pa.

Mr. Hare traces the North Pennsylvania back to April 8th, 1852, when the Philadelphia, Easton & Water Gap, later called the North Pennsylvania, was incorporated. In 1853 track-laying started. Since American railroads were then using at least six different gages, or track widths, promoters of the new line played safe by authorizing a roadbed wide enough for six-foot-gage double trackage but including a third rail for 4 foot 8½ inch equipment.

In 1855 mule-drawn cars began to carry passengers over a mile and a half track to and from the Philadelphia terminal station, but in 1857 the company's fourth annual report deplored utilizing mules as motive power because of "inhumanity of the drivers in the treatment of the animals." Meanwhile, steam trains had been put in operation between the terminal and Gwynned; and early in 1858 the mules were replaced by dummy engines running through the city streets. Mr. Hare's treatise has an interesting chapter on "Famous North Pennsylvania Locomotives"

In 1879, when the North Penn was leased by the Philadelphia & Reading, it comprised 55.6 miles of main stem between Philadelphia and Bethlehem, plus 30.8 miles of branches.

(Continued on page 138)

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Reader's Choice Coupon

Stories, features and departments I like best in the July '44 issue are:

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3 .....
4 .....
5 .....
6 .....

Best photo is on page.....

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RAILROAD MAGAZINE
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One branch connected with the Delaware & Bound Brook, which in turn connected with the Jersey Central. By leasing the D&BB in addition to the North Penn, the Reading acquired direct access to New York Harbor over Jersey Central rails. The lease is for 990 years.

"In view of the astounding advances and changes which have occurred in transportation since the inception of the railroads less than a century and a half ago," Mr. Hare writes, "it would be futile to attempt to envision the appearance of the North Pennsylvania Railroad when the year 2869 rolls around."

Construction of the Lebanon Valley and North Penn roads was begun in the same year, 1853. However, as Mr. Shay's Lebanon Valley history points out, the former was chartered as early as April 1st, 1836, but was not built promptly because of money shortage and because of opposition from canal and wagon competitors.

Even after track-laying had been started, construction workers struck for the same wages as were paid to canal men. Strikers armed themselves, refused to let the railroad horses be fed or watered, and set fire to a contractor's stable. Three horses and six mules met a horrible death in the flames. Several tons of feed and grain were destroyed. Three mules managed to kick their way out of the blazing stable, two being severely burned. Forty or fifty men standing around prevented the rescue of livestock or other property. State militia later rounded up some of the culprits and marched them to jail in a square of bristling bayonets.

In 1858, while the Lebanon Valley line was still being built, it was taken over by the P&R. Shortly afterward came the first rail trip from Reading to Lebanon; and on January 18th, 1859, the entire line was completed and opened to service between Reading and Harrisburg—present route of the fast express *Queen of the Valley*.

* * *

A NEW, VALUABLE, reference work in our library is *Facts on File Yearbook*, of which Vol. III, 1943, has recently been issued by Person's Index, Facts on File, Inc., 516 Fifth Ave., New York City 18. This large, sturdily-bound volume (8½x11 inches, 418 pages plus an 85-page annual index) sells at $20. It provides a readily accessible check-up of events in the past year, including

railroads, finance, economics, war, arts, science, education, etc. For instance, if we want reliable facts on the *Lackawanna Limited* wreck or the Brotherhoods' strike vote or carloadings or what have you, we can find them instantly in this *Yearbook*. We recommend it to all readers for whom the accuracy of news is important.

* * *

FOR MODEL RAILROADERS who want to operate their layout as a *railroad*, not just as tracks with trains running on them, Lawrence Sagle has written an ideal guide, packed full of valuable information, diagrams, and illustrations. In his *Book of Rules for Model Railroaders*, Mr. Sagle describes in detail how professional organization and standard operating procedure, in force on the country's Class I systems, can be applied to scale layouts. His book includes information on the various operating departments, duties of officials, train orders, timetables, etc.

In addition to 175 pages of text and a useful index, there are numerous illustrations in the form of diagrams, reproductions of actual train order forms, etc., and photographs. Mr. Sagle is the 1944 president of the National Model Railroaders Association, and a railroad man himself. *Book of Rules for Model Railroaders* is put out by the Model Craftsman Publishing Co., Ramsey, N. J., price $2.50.

* * *

FOR PLEASANT READING, we recommend *Railroad Panorama*, by A. C. Kalmbach, 228 pages including the index, illustrated with 32 photographs.

Written in an easy, conversational style, there are chapters on Grand Central Terminal, Pennsy's Horseshoe Curve, the first transcontinental railroad, the Lucin Cutoff across Great Salt Lake, railroad personalities, famous trains.

Published by the Kalmbach Publishing Co., Milwaukee 3, Wisconsin, *Railroad Panorama* sells for $2.75.

If your copy of *Railroad Magazine* arrives late, remember that wartime freight is often delayed. Magazines are not given priority. We print on time, but cannot guarantee prompt deliveries "for the duration."

Railroad Panorama is a book written by A. C. Kalmbach—a railroad enthusiast and publisher of railroading books and magazines such as Trains Magazine, Trains Albums and Model Railroader.

He has an uncanny ability to express in beautifully simple words his impressions and experiences of railroading from the unusual point-of-view of an onlooker who enjoys the unique privilege of intimate friendship with "brass hats" and "supers" whose factual knowledge makes Railroad Panorama so authentic.

"He knows more about railroads than any railroad man I ever knew," says Bernard Young, executive representative of the Southern Railway System. To railroad officials in all parts of the country he is just plain "Al."

Railroad Panorama gives a broad picture of the early and present history of American Railroads, skipping across the continent to describe the ant-hill-like maze of stores and tunnels of Grand Central Terminal, a city in itself; the amazingly engineered and picturesque Horseshoe Curve of the Eastern Alleghenies; the pride of the "fleet' between New York and Chicago, The Twentieth Century Limited; the growth of a nation through transportation when the Golden Spike was driven; and 16 other intriguing chapters.

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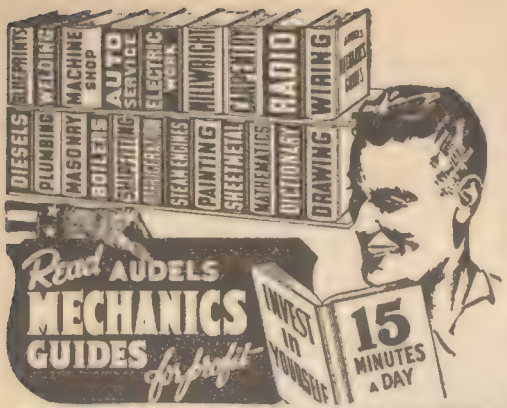

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Railroad Camera Club

ITEMS in this section are published free, in good faith, but without guarantee. Write plainly on a separate sheet or card containing name and address. Do not bury your *Swich List* entry in a letter dealing with other subjects. Include all essential details briefly.

Redball handling is given to each item we get he first six days of each month, if accompanied by a Reader's Choice Coupon (clipped from page 138 or home-made).

Use the usual abbreviations and photo sizes.

(R) indicates desire to buy, sell or swap back issues of *Railroad Magazine*. (Specify condition of all magazines.)

(*) indicates juicefan appeal.

When writing to anyone listed here, enclose a stamped env. for reply. If you do not get an answer, it may be because the man was called for military service.

The Switch List

REX BEACH, 112 S. Mill St., Waterville, Minn., will buy any size pix of CGW, M&StL, MN&S. Will sell or trade CGW tr. ords, tts. and pix. Send stamp for list.

(R) LEE BEAUJON, Canaan, Conn., offers 3400 U. S. and foreign stamp collection for *Railroad Magazines* before Jan. '43, NYNH&H tkts., pix, tts. Make offer.

(*) G. W. BEST, 20 Rockmere St., Uphams Corner 25, Mass., will buy, sell, trade size 120-116 juice pix. List for list or 3c stamp. Wants esp. New England roads, pix or negs. of Springfield St. Ry. & Eastern Mass. cars now on other roads.

WM. BISSINGER, 39-33 56th St., Woodside, L. I., N. Y., offers 10 assorted 5x7 pix stumbd locos and trains for $1.50 until June 30th only.

BRUCE C. BOWDEN, 26 Sterling Rd., Waltham, Mass., wants B&M pix, esp. 2900 series; has rosters of B&M, P&LE, Vgn, Soo Line, 4 for $1. Sells B&M, other pix; list for stamped, addressed envelope.

(R)W. L. BREIG, 1412 E. Cheltenham Ave., Phila., Pa., offers *Railroad Magazines* Jan., Mar., Sept. '32; June, July, Sept., Oct. '33; Feb., Apr.-June, Sept.-Dec. 34. 25c defense stamp ea. or $3. defense stamps for all, postpaid.

(R) FLOYD BRUNNER, East Marion, N. C., will pay cash for *Railroad Magazines*, all 1941 exc. Aug.; Jan., Apr. '42; also emp. tts. for Southern & Clinchfield.

W. E. BUSH, 2840 Washington St., Chicago 12, Ill., has KCM&O rulebook, $2., $1.50; pass, 25c; group insurance policy, 75c; EJ&E rulebook, $1.50; B&O rulebook, $1.50; T&P pass, 25c; Penn emp. timecard, Phila. to N.Y.C., 75c.

KENNETH CASFORD, 5021 Woodland, Kansas City, Mo., has new memo list of Kansas City Public Service pass. eqpmt., all active service types. Free list, sample for 3c stamp. Mail answered.

(*)R. F. CASHION, 957 E. 49th St., Brooklyn, N. Y., will trade 29 vol. set *Encyclo. Brit.*, new, leather binding, for obsolete U. S. trolley trfs. in good cond. prior to 1920. Write first.

RICHARD J. COOK, 3402 W. 135th St., Cleveland, O., wants emp. tts. of Nickel Plate between Cleveland and Chicago; also, wants sharp pix of NKP motive power and action shots, pc. or larger.

J. M. DeROZARIO, 165 W. 120th St., New York 11, N. Y., wants magazines, rulebooks, emp. tts. Send list of what you have for sale.

NORMAN L. DOUGLAS, Box 3352 Brentwood, Calif., will buy any size negs of any road pic of SP 4444, other SP, AT&SF, WP engs. Will sell 120 loco pix, 5c ea., 28 for $1.; 116 loco pix, 6c ea., 25 for $1.; PC loco pix, 10c ea., 18 for $1. Send 5c for list and sample.

SAM EPSTEIN, 1705 S. 2nd St., Phila., Pa., will trade obsolete rr. stocks and bonds; railroadiana for U. S. stamps.

RAILROAD CAMERA CLUB is open to all who collect railroad or streetcar pictures or other railroadiana such as timetables, passes, train orders, trolley transfers, magazines, books, etc. There are no fees, no dues.

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(*)CARLOS FLORES, 10829 Kalmia, Los Angeles 2, Calif., will trade Los Angeles Ry. passes for pix of CB&Q Engineer "Sandhill" Moore.

JOHN J. FLUHR, 266 Orchard St., Elizabeth 3, N. J., will sell Sept. '26 *Off. Guide*, fair cond. for $1.25; Make offer for CNJ, Rdg., NY&LB, Erie, DL&W, PRR emp. tts, Dec. '38 *Off. Guide*, Oct. '34, Mar. 41 Bald. Loco., *Eng. Journal*, all in good cond.

(*) STANLEY FRENCH, Livermore Falls, Me., will trade tr. ords. for steam or juice pix; also, has two pix of strmlnrs for steam pix. Thanks correspondents for replies and postage, one who sent 25c payment for relative.

(R) Mrs. JOHN B. GIDLEY, 2126 Pierce St., Flint 3, Mich., will buy *Railroad Magazine*, May, June, '43, in good cond.

R. J. GRANTHAM, 4739 Northcote Ave., E. Chicago, Ind., wants emp. tts., rulebooks, tr. ords. of any pike.

(*) CHAS. W. GREELEY, 42 Commerce St., New York 14, N. Y., will trade subway, el, streetcar, bus maps of New York and Boston for maps of Chicago, St. Louis, Kansas City, Los Angeles, San Francisco, Phila.; also, Class I rr. tts. for LVT, P&W, PST, CNS&M, CA&E tts. Write first.

FRANCIS GSCHWIND, Route 3, Callaway, Neb., will buy latest tts. of Mexico Natl. Rys.; also UP tts. of 1930. Wants pix of UP motor cars.

(R)S. GUTHRIE, Rte. 1, Box 382, Cold Spring, Ky., buys pix and negs. of ET&WNC, Linville River RR, Unicoi Ry., Lawndale Ind. Ry., other short lines; loco cars or scenes; wants *Railroad Magazines*, Feb., July, Oct., Nov. '40, *Off. Guides*, 1921.

(R) DEAN HALE, Box 135, Blackwell 2, Okla., wants 1900-44 *Railroad Magazines;* emp. mags.; emp. tts., esp. AT&SF, all divs.; *Loco & Car Bldrs. Cycls.;* pass. tr. eqpmt. registers; material on all U. S., Canadian, English roads; wreck pix; frt. and psgr. cars; rosters. Write, enclose stamp.

JOHN HARPER, 28 Main St., Delhi, N. Y., will buy size 120 or larger negs. and pix of locos and trs., U. S. and Canadian short lines; operating, aband. n.g., etc., esp. U&D, NYO&W, Del&Nor., Cat. Mt. n.g., SNY elec. Wants tts., literature of these roads, Bull. 37, R&LHS.

WALLACE HEIN, 2242 Argyle St., Chicago 25, Ill., buys C&NW tr. ords., emp. tts. Wants to contact C&NW fans, Chicago area. Send lists.

(R) ANDREW HENNIG, 45 Walnut St., Batavia, N. Y., will sell *Railroad Magazines*, good cond., Dec. '37. Jan., Mar. '38, Sept., Nov. '39, Jan., Mar. '40, Jan., May '41, Jan., Feb., Apr., Sept., Dec. '42, Mar.-May, Aug. '43, for $2. plus postage, 9 lbs. Will buy tel. key and 4-ohm sounder for dry battery. OK for beginner.

(*) A. E. HICKERSON, 2304 E. 15th St., Kansas City 1, Mo., has 116, 3x4, new 4x5 KCPS pix; also KC interurbans, sets of trfs. and transit maps.

I. E. HINZE, 800 N. 3rd Ave., Chisholm, Minn., will buy rr. pamphlets before 1915, books, pix, souvenirs. Send lists.

(*) BILL HOUSTON, 4 Eastdale Ave., Toronto 13, Ont., Can., offers 620 siz pix of TTC st. cars, also trfs. Wants pix, rosters, histories of Canadian juice lines. Write for list.

(*)HAROLD JOHNSON, 6111 N. Franklin St., Phila. 20, Pa., will buy size 116 or 616 pix of any U. S. city line now operating; or will give 15 different PTC trfs. for one pic. Send lists, state if accept trfs.

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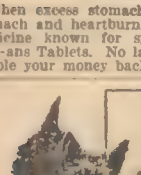

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Cpl. FRED R. KERN, 33594889, 250th Ordnance Co., APO 860, c/o Postmaster, New York, N. Y., will buy 116-616 negs. of PRR and Rdg. power, esp. PRR H8a, H9se, L2s, Q1, T1. Fans, please write.

HERBERT KNAUTZ, 5613-42nd Ave., Kenosha, Wisc., will buy pix of locos and stations on C&NW and Soo Line. Write offer first.

ARTHUR LINDROOS, 801-20 Ave. So., Minneapolis 4, Minn., will buy loco pix; will buy or trade st. car tokens or trfs.

(*)STEPHEN D. MAGUIRE, 304 2nd Ave., Bradley Beach; N. J., changing permanent address to 61 Broadway, Ocean Grove, N. J. Correspondents please note.

MARVIN A. MAHRE, RFD No. 7, St. Paul 9, Minn., will trade Soo Line or NP tr. ords. for following: LV, CNJ, Reading, Erie, C of G, PRR, D&RGW, Chicago GW, Chicago & NW, C&O, and Atlanta & West Point. Ords. with or without clearances depending on completeness.

(*) L. A. W. MANCHESTER, 770 Franklin St., Worcester 4, Mass., will buy pix of elec. and Diesel-elec. eqpmt., esp. New England juice lines, past, present.

ELMER E. MILLER, AP, c/o Dispatch, York, Pa., will buy pix old B&O scenes and 19 and 31 tr. ords.

(*) L. D. MOORE Jr., 2102 Parker Ave., Portsmouth, Va., will buy Seaboard 2-8-0 type pix such as 970 or 976; also, trolley pix from Portsmouth, Va., Petersburg, or any No. Car. line.

(*) Sgt. FRED W. MOULDER, 2531 Amherst Ave., Butte, Mont., will trade, sell or buy 116 pix Butte Elec. Ry. cars taken 1906, 1924, 1937 for Boise Valley Traction Co. (Idaho) cars and St. Louis Car Co. 40 psgr., 6 window cars, any ry., built 1904-10.

H. MOYERS, R-3, Stuart, Iowa, will buy p.c., 4x5 or larger loco pix of Rock Island No. 4057-4058, 5026, left side if possible; also C&NW strmlnd Pacific. Write.

(*)Cpl. EDWARD NAGY, 32984812, Sv. Btry., 669th FA Bn., Cp. Bowie, Tex., collects trfs., pix from N. Y., Boston, Conn., Balto., Pa., Kansas City, St. Louis, San Diego, Chicago, Wash., D. C., N. J.

Rev. FRANK R. NEFF Jr., Box 96, Everglades, Fla., wants tts. of U. S., Canadian, Mexican rrs., esp. Canada, also T&NO and smaller lines. Will return postage.

(R) DON NOONAN, 120 No. Pierce St., Galion, O., will trade or sell *Railroad Magazines*, 1938 on; *Model Railroader*, '42 on; *Miniature Railroading*, '39 & '40; *Hobbies*, '34 on; *Modern Mechanics*, '36 on; *Hunting & Fishing*, '35 on; *Model Maker*, '34-'36; *Model Craftsman*, '35 on; *Model Builder*, '42 on, all A1 cond. All mail answered.

T/Sgt. STUART NORGARD, 412 W. Beach St., Biloxi, Miss., wants pix of locos and eqpmt. from C&NI, EJ&E, DSS&A, B&LE, DT&I, GBW, GM&O, PH&D and Alton. Write and send prices.

(R) ARTHUR V. O'DELL, 25 Sproat St., Detroit 1, Mich., will buy *Railroad Magazine*, Oct. '35.

(*)ANDREW PAYNE, 3 Paxton St., Leicester, Mass., will sell or trade 120, 116 and 4x5 pix of B&A, B&M, Worcester St. Ry. for pix of other rr. and elec. lines, esp. SP, UP, AT&SF, D&RGW (n.g.), PE. Will trade pix for tr. ords.

AL PARKER, 1198 Stitt St., Wabash, Ind., will trade tr. ords. of many roads for Mexican, Canadian (besides CN and CP), Spokane Internatl. ords.

(R)BUD PARKS, Fort Rock, Ore., wants emp. tts., esp. western lines, or will trade for SP&S emp. tts. Will buy Aug. '35 *Railroad Magazine* with GN roster for 75c.

(*) WM. REDDY, 21 Chamberlain Dr., Buffalo, N. Y., buys interurban pix of today, esp. JW&NW, NStC&T and Texas Elec.

ALBERT REMALY, 351 Broadway, Bethlehem, Pa., sells 116 pix of locos, 10c ea. or 3 for 25c. Wants war stamps if possible. Write for list.

JOHN V. ROBINSON, USN, 126 12th St., E. Ocean View, Va., will buy complete '40 and '41 *Trains;* also Jan., Feb., May., June, '42 issues.

ROCKY MT. RR. CLUB, Denver, Colo., has roto-print drawings, broadside, of D&RGW 3712 4-6-6-4, $1.15 postpaid, size 16½x38; 5/16" scale. Write c/o Joseph Schick, Treas., listed in this column.

J. W. ROGERS, Box 34, O. V. Sta., Norfolk 3, Va., will pay $5. for copy of *Off. Guide*, 1915-1920; $3.50—1920-30 good cond. Write first.

BERNARD J. ROOT, 180 "J" St., San Bernardino, Calif., will sell complete sets tr. ords.; AT&SF 1st, 2nd, 3rd, 4th dists.; UP 1st dist.; SP Beaumont dist.,

all LA Div., 10 to 25c ea. set. Will include 10 UP poster stamps.

JOSEPH SCHICK, Box 65, Keenesburg, Colo., will trade size 116 negs. of CB&Q, AT&SF, RI, C&S, D&RGW, std.-g. for same size negs, locos. only. Has 2500 negs. to supply prints from all roads.

(R)FRED R. SCHUPBACH, Route 1, Madison 4, Wisc., will sell or trade *Railroad Magazines* for *Loco. Eng. Journal* before Apr. '42.

(R)CLARENCE SHAW, Box 16, Zachary, La., will sell June, July, Oct., Nov., '43 *Railroad Magazine* at 30c per copy, postpaid.

C. V. SIMON, 4228 No. Kenmore Ave., Chicago 13, Ill., will sell July 12, 1896, CGW and Jan. 26, 1902 C&NW pub. tts. together or separately.

(*)HARTLAND B. SMITH, 467 Park Ave., Birmingham, Mich., will trade Detroit United and Kansas City Public Service pix for trolley and n.g. views.

(R)JUNIOR STEVENSON, Box 312, Walkerton, Ind., offers pix frames 4-4x6—40c; 6-7x10—$1.; 1-6x8—15c; *Railroad Magazine*, Sept. '43; *Trains*, July, '41; B&O Mag., Dec. '41, Sept.-Dec. '43; C&O Mag., Jul., '42, 20c ea.

WARREN D. STOWMAN, 7444 Forrest Ave., E. Germantown, Phila., Pa., wants size 5x7 or larger pix of SP 6300, 6400, 4-8-2, 2-8-0 No. 6574, ACL 4-6-2 No. 1600, SAL 4-8-2 No. 250, FEC 4-8-2 No. 442, Jacksonville Term. 0-6-0 (any one), C&O No. 490 group 4-9-2, N&S 2-8-0 No. 210, Portsmouth & Norfolk Belt Line 2-8-0 No. 16, ACL No. 1212; also, has Reading, PRR to trade.

(R)JOHN STROCK, 116 Stone Ck., Rd., Elm Grove, W. Va., will trade Aug.-Nov. '43 *Railroad Magazines* good cond. for July or Apr. '43.

LEWIS TWAMBLEY, 817 Gordon Ave., Verdun, Que., Can., wants to hear from railfans in Montreal Dist. Phone York 5050.

M.J. WHEELER, RFD No. 2, Pine Plains, N. Y., will trade pocket tts. of CB&Q, Feb. 2, 1892, C&NW, Mar. '92, Kingston Ed. of NYC West Shore, Nov. 15, '91 for your offer, esp. old loco pix, Mott's *History of Erie RR.*

(*)ROBT. WIETZKE, 2325 W. North Ave., Milwaukee 5, Wisc., will trade trfs. of Milw. for other cities, good cond. Send 3c stamp.

(R)WOODROW W. WILLIAMSON, 151 Madden Lane, Tulare, Calif., will trade Apr. '42, Feb., Mar., June, July, Sept., '40, May, '39, Jan., '37, '38 *Railroad Magazines* for Nov. '37, Mar., Apr., June, Oct., '38, Feb., '39; will pay 25c for May, '35 and before.

CLIFFORD WILSON, RFD No. 2, New London, Conn., will buy pix of locos, coaches, stations, tts., of old Valley Br. of NYNH&H.

N. R. YOUNG, Seminary Refectory, Gettysburg, Pa., will buy negs. or pix locos of Colo. Midland, Gettysburg & Harrisburg, Hanover Jct., Hanover & Gettysburg or Hanover Br., Georges Creek & Cumberland, Raritan River, Buffalo Creek & Gauley, and WM. Wants to hear from firemen. Answer all mail.

Flag Stops

MEXICAN railroad equipment and methods will be compared with those of U. S. by V. H. Morosso, General Agent, National Railways of Mexico, and movies will be shown, at 8 p.m. June 23rd in room 2718, Grand Central Terminal, New York City, under auspices of Railroad Enthusiasts, N. Y. Chapter. Public invited free.

* * *

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Model Trading Post

LISTINGS here are free. Keep 'em short. Because of time required to edit, print, and distribute *Railroad Magazine,* all departmental material should be sent to the editor seven weeks before publication date. Every *Trading Post* entry must be accompanied by the latest Reader's Choice coupon (clipped from page 138 or homemade.)

JAMES BEATTY, 1511 E. 85th St., Chicago 19, will sell or trade Erector Set No. 6½ with motor in good cond. complete; also 2 pr. Junior-size boxing gloves new. Wants O or 027 cars, 027 switch loco and tender.

DON BLANCK, 3866 Hollywood Ave., Hollywood, Ill., wants Lionel 223 auto. r-h. switch with controller; cash for perf. cond. only.

BRUCE BOWDEN, 26 Sterling Place, Waltham, Mass., wants all kinds HO eqpmt.; AF caboose, old-style eplrs., trucks, in perf. cond. Has HO parts, incl. AF bodies.

IRA F. BRAYMER, JR. *(brakeman),* 907 Queen Anne Ave., Seattle 9, Wash., will buy live-steamer. Send description, price, photo.

C. J. BURRELL, 9 Cardwell St., Greenville, S.C., has small reversing motor, up to 24 volts A.C., also radio dial gears (good for model motors); wants recording motor and turntable.

CLYDE BUXTON, Rte. 2, Loveland, Ohio, wants std. loco and cars, any cond., also wheels, connecting rods for Lionel Build-a-Loco; will pay cash, or trade.

Cpl. GEORGE CASSELMAN, 91st Ftr Control Sq., Army Air Base, Bedford, Mass., wants 027-gage Lionel and Marx eqpmt.; all letters answered.

DON E. DEAL, 533 W. 112 St., Los Angeles, Calif., wants to hear from those having O-gage tinplate eqpmt. for sale or trade.

ARTHUR F. DENKMAN, 1218 N. Market, St. Louis 6, Mo., will buy HO locos, pass. and frt. cars, switches, track, signals, etc. Write descriptions and price.

ALVIN FITZPATRICK, 259 Avalon Ave., Cincinnati 15, Ohio, will pay your cash price for one Lionel 711 R switch.

K. E. GOODSPEED, Box 212, Schroon Lake, N.Y., will buy 2-rail OO-gage pass. and frt. cars, switches, etc. Has Lionel elec. coal elevator good cond. to trade for OO-gage eqpmt.

RAYMOND J. HERDT, S/Sgt., 39th Acad. Sqd., AAFTC Technical School, Yale University, New Haven, Conn., wants 2-rail, OO-gage trucks, Lionel or Scalecraft, also Mantua eplrs., other OO eqpmt. Write first.

HARLAN L. HOWE, 2215 14th St., Troy, N. Y., wants 9½-in.-gage live steam loco; state price and cond.

WALTER E. HOXIE, 49-C March St., Providence 8, R.I., will buy O-gage r.c. switches, Trainmaster trfmr., block signals, locos esp. 0-6-0 switcher, cars with auto-elec. eplrs and trucks with same, AF and Lionel catalogs.

L. D. HUDSPETH, Box 6, Lexington, Okla., wants Lionel r.c. O-gage switches, 2900 series cars, frame and boiler for 263 loco; cash or trade.

BASIL JONES, 628 10th St., N.W., Roanoke, Va., will trade Lionel 1664 loco and whistle tender, candid camera, for Lionel 2-6-2 loco and tender, 0 or 027.

Pvt. JOHN KEMPER, 13155467, Co. C, 159th Inf., A.P.O. 726, c/o Postmaster, Seattle, Wash., will buy small HO loco motor or HO parts. Write particulars.

ALLAN KINSMAN, Rte. 3, Box 29, Houston, Tex., wants O-gage live steamer, Bassett-Lowke, steam elec.; what have you? All letters answered.

ROBERT S. LOVETT, Locust Valley, L.I., N.Y., wants Lionel O- and O-72-gage switches.

R. C. McLAREN, 1035 Mapleton Ave., Oak Park, Ill., has Lionel, AF O-gage locos, cars, track, switches, accessories, all exc. cond. List for 3c stamp.

BOYD J. McWHORTER, Moorefield, W. Va., builds ¼-inch scale frt. cars, $4.50 to $10 ea.

ED. DE MARCO, 1150 60th St., Brooklyn 19, N.Y., has 225EW locos and tender, 905B switcher and tender, 758W UP strmlnr., 2623 Pullmans, 2900 frt. cars, 165 magnet crane, switches, trestles, str. and cvd. track, many other items; sell or trade for OO or HO scale eqpmt.

R. T. MURRAY, Box 66, Punxsutawney, Pa., will buy std. eqpmt.; has 219 derrick car, 67 whistle controller, 385W tender to trade for loco.

Model Trading Post

DON NOONAN, 120 No. Pierce St., Galion, O., will sell or trade O-gage tender, complete slope type, black, unlettered; Lionel 265 w/tender; A 1688 Pa. strmlnd loco, headlight remote control, no tender. Wants O-gage st. car. All inquiries answered.

WALTER B. PACKARD, 255 Sheppler St., Rochester 12, N.Y., will buy No. 2 or 3 K&D motor in good cond.

P. B. PATTERSON, 1011 Lawndale Ave., Detroit 9, Mich., will trade O-gage live stmr, blt. Bassett Lowke, or ¼-in. scale frt. cars for AF 3/16 tru scale die cast Pullmans No. 521 and 524.

JON PITTALA, 80-33 88th Ave., Woodhaven, N.Y., will trade std. gage bridge w/track for Lionel O-gage switcher No. 708 or 903B or Loco. No. 2225E or Walthers O-gage Mikado, Berkshire, Mountain or Hudson type; or, will trade for Walthers or Lionel solid rail track.

C. H. REYNOLDS, Box 199, Rutledge, Pa., wants Buddy-L eqpmt.

HARVEY ROE, 68 Lake Ave., Tarrytown, N.Y., will sell O-gage Lionel 156 loco, 2-610 and 1-612 psgr. cars, dark green, good cond. about 28 years old. Make offers.

O. P. STUFFLEBEAM, 833 Derby Lane, Green Bay, Wisc., will buy Lionel std. gage eqpmt. and track, 1906-20 period; steam locos No. 5, 6, 7, 51; elec. No. 33, 38, 53, 42, 54; Pullmans No. 18, 19, 190; day coach No. 29; frts. of 11-17 series; also, old catalogs.

W. R. SWANSON, 7508 Ravenna Ave., Seattle, Wash., will rewind your HO motor for 12-volt operation in exchange for back issues of *Railroad Magazine, Model Railroader, Trains,* PRR calendars before 1942, NYC calendars before 1932, or calendars with Currier and Ives rr. scenes.

ART WEINMAN, Carrier 22, G.P.O., Rochester 5, N.Y., will buy Lionel 6-in. single truck psgr. cars, 757 cabooses, bodies only, no trucks or cplrs.; or will trade or sell New Lionel and AF str. and cvd. track, Lionel Hell Gate Bridge; wants Monorail outfit, esp. Leland Detroit and pic of M&StL Mogul No. 334.

A Smart Fireman

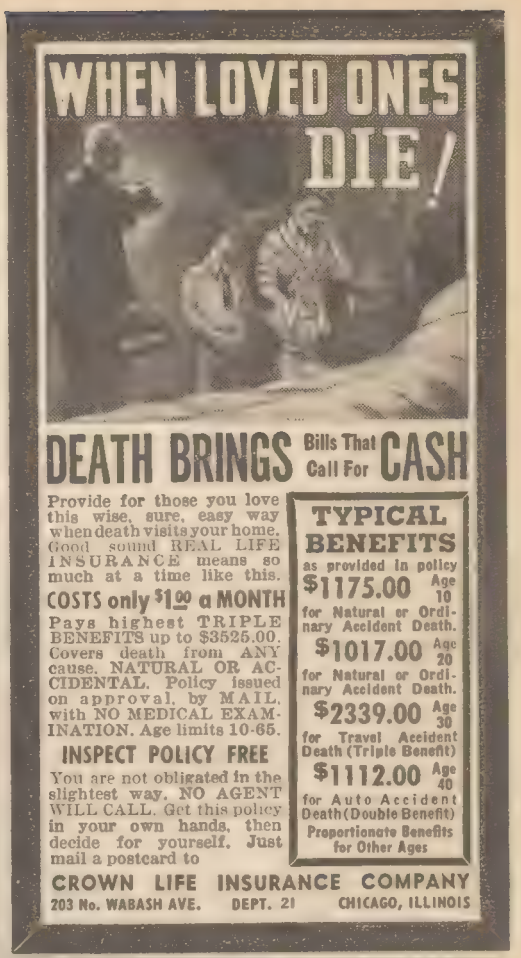
"SPEAKING of avoiding a reprimand," said V. A. Updike, as we struggled with a string of iron ore cars for Sparrows Point. "A fireman in Wilmington, Dela., did about the neatest job I've ever heard of." And he told me about it, as follows:

The Superintendent was known to be allergic to noisy pop valves and smoke while standing in the Wilmington terminal, and had issued orders accordingly. On this occasion the pop valve on a K-4 was blowing off a few minutes before leaving time. The Super walked up to the engine and called to the fireman:

"Why is that engine blowing off?"

"Why sir," the fireman responded innocently, "because the pressure inside of the boiler is greater than the tension of the spring in the pop valve—therefore, it raises the valve and lets the excess pressure escape to the atmosphere."

Astounded by the technical answer, the Superintendent walked away without a rebuke—*Frank Clodfelter.*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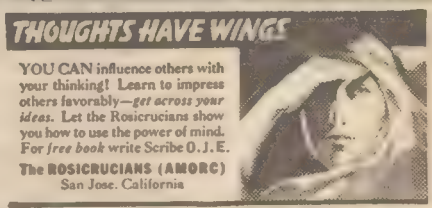
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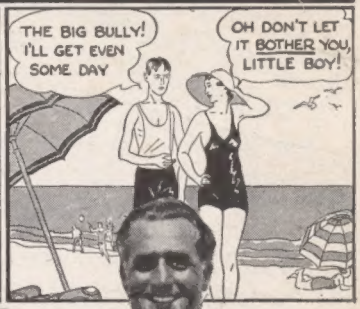
HOW JOE'S BODY BROUGHT HIM FAME INSTEAD OF SHAME



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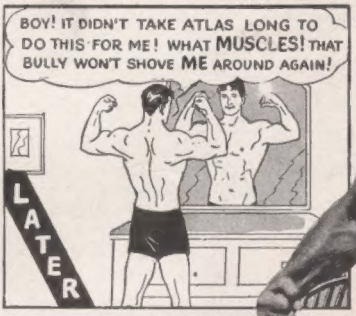

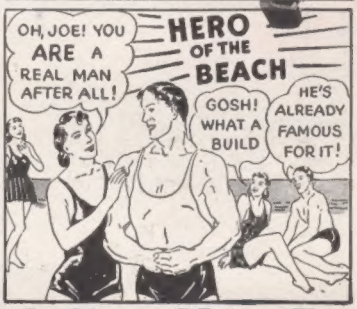

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